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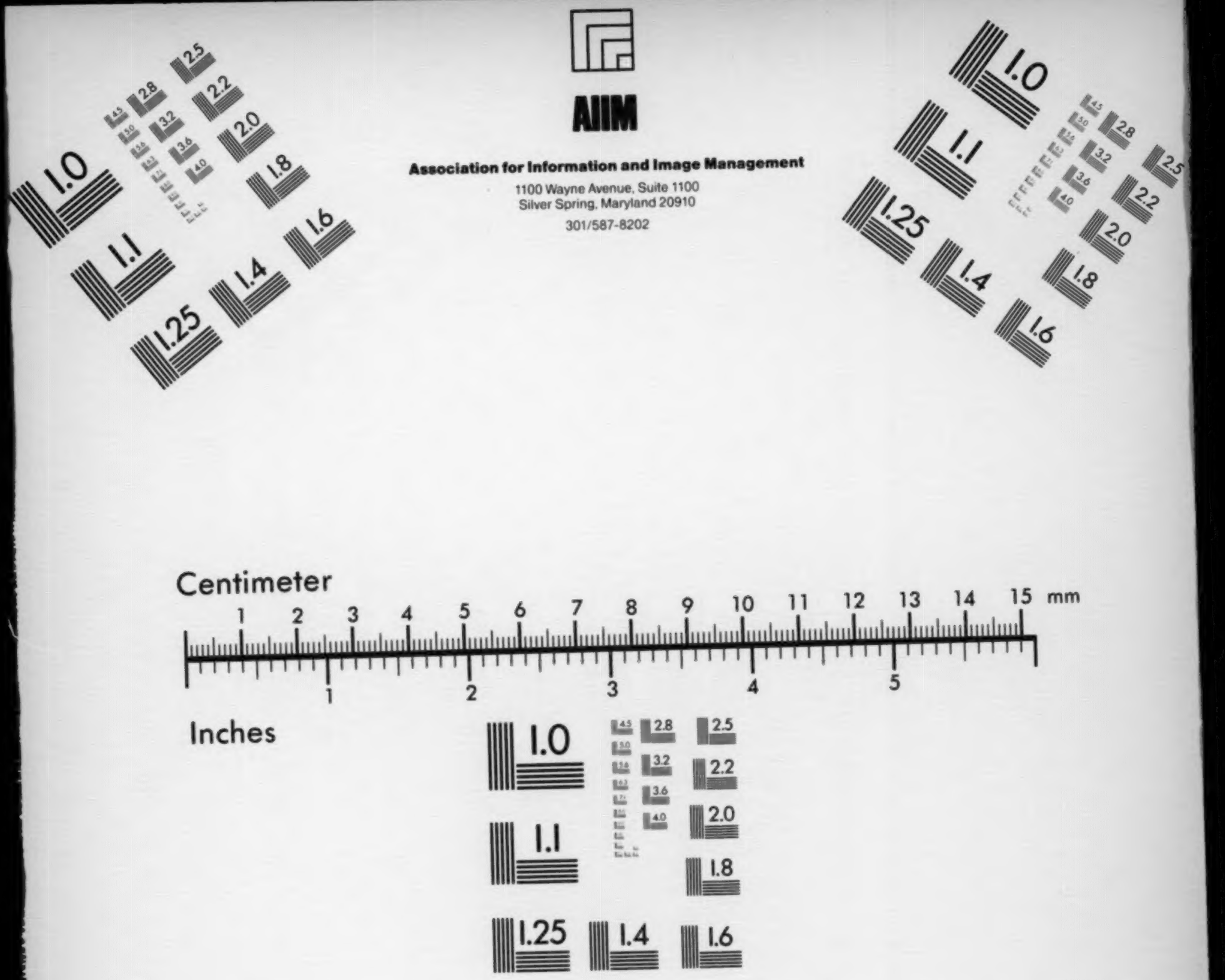
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THE ARGIVE HERAEUM



CHARLES WALDSTEIN

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THE ARGIVE HERAEUM

Archaeological Institute of America
American School of Classical Studies at Athens

THE ARGIVE HERAEUM

BY

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IN TWO VOLUMES

VOLUME I

GENERAL INTRODUCTION, GEOLOGY, ARCHITECTURE
MARBLE STATUARY, AND INSCRIPTIONS

BOSTON AND NEW YORK
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1902

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Published September, 1902

TO

CHARLES ELIOT NORTON

FIRST PRESIDENT OF THE

ARCHAEOLOGICAL INSTITUTE OF AMERICA

THIS WORK IS DEDICATED

330744

NOTE

This work is issued by the authority and under the auspices of the Archaeological Institute of America and the American School of Classical Studies at Athens, which share the financial responsibility for it. The supervision of its publication has been intrusted to a Committee which consists of representatives of both bodies.

Each contributor has been left entirely free to express his opinions and sentiments regarding the subjects treated by him — even where in these he differed from his associates — and is therefore solely responsible for the statements made in the articles written by him.

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On behalf of the School at Athens.

PREFACE

The excavations on the site of the Argive Heraeum were carried on by the American School of Classical Studies at Athens, with the active support of the Archaeological Institute of America, under my direction, during the four springs from 1892 to 1895.

In presenting this official record of the work there done, I venture to hope that this publication will in some degree be worthy of the excavations themselves. It cannot be denied that the site itself and the remains there discovered by us are of extreme and exceptional importance. No period of ancient Hellenic life, historic or prehistoric, is known to us at the present day, of which our excavations have not yielded instructive illustration. All the new evidence concerning the prehistoric period of the ancient classical world furnished by the Heraeum and other sites becomes the more important and illuminating from the fact that our excavations show an undoubted and continuous connection between the Mycenaean age, its immediate precursors and successors, and the historical periods of ancient Hellas. No other site can furnish such evidence in the same way and to the same degree. In this respect the Argive Heraeum holds a position unique among all sites of the ancient world hitherto excavated.

Should this publication be at all worthy of the results of our excavations, I feel that this will have been achieved in the face of exceptional difficulties, which made themselves felt in the work of excavation itself, as well as in every phase of the preparation and elaboration of the finds and their publication.

The young men who acted as my assistants at the excavations, who one and all stood by me so loyally in all difficulties and ultimately became so efficient in their work, came to me, with hardly an exception, as novices who, in those days, had not even been able to pursue a complete course in archaeology in any of the home universities (a want which is now being rapidly supplied in many American universities). In most cases, when they had thus become really efficient assistants they were called away by the offer of some appointment at home or by some other inducement, the organization of the staff was disturbed, and the same period of preparation and probation had to be gone through anew with others. Among those who remained with me for more than one campaign, and whose help was in consequence the more efficient, as the part they played in the excavations was more important, are Professor J. C. Hoppin, Professor Richard Norton, and Dr. H. S. Washington.

I should like to say at once that the proportion of work done by the several assistants at the excavations is not adequately shown by the part they take in the publication. This I regret much; but it has been inevitable. I had hoped that all those who had done service at the excavations might in some way be directly associated with the publi-

cation. But it happened in many cases that, when it came to the work of preparing the material at Athens, and, still later, of writing on the material thus prepared, the former assistants were occupied elsewhere or could not find time for the work. Professor Norton, who has since been made Director of the American School in Rome, is represented in this book by a short chapter, which is far from showing the prominent part he took in the excavation at the Heraeum and in the sorting and arranging of the finds at Athens. The same is true of Dr. Washington. So too the prominent part taken by Professor C. L. Brownson during the first year's work receives no acknowledgment at all, so far as his participation in this book is concerned, owing to the fact that his University work has kept him occupied in America since 1893. The same was the case with his colleague, our architect during the first year, Mr. Thomas A. Fox, who furnished the excellent plan of 1892 (*American Journal of Archaeology*, 1893, VIII. Pl. xii.). His place was taken in the last year of excavation by his able successor, Mr. E. L. Tilton. Among those who find no place at all in the publication are Professor W. C. Poland, Mr. John Alden, Dr. C. L. Meader, Professor Barker Newhall, and Dr. J. D. Rogers. The latter has, however, given a careful preliminary publication of the inscription on a bronze tablet found in 1895 (*American Journal of Archaeology*, Second Series, 1901, V. pp. 159 ff.).

In looking back upon my association with all these scholars, so different in temperament and training, I cannot help feeling intensely gratified when I recognize that all have become and remain my sincere friends.

I must further thank the Greek authorities, notably M. Cavvadias and his ephors, for the manner in which they furthered the work of excavation and were always ready to meet my wishes, while conscientiously fulfilling the duties which their office laid upon them. Our relations have been from beginning to end those of complete and undisturbed harmony and friendliness. I must also express my thanks in this connection to the Archaeological Institute of America, which provided about half of the funds for this excavation; and among those persons who privately contributed when funds were most needed I must record my sense of gratitude to the late Mr. John Taylor Johnston and to Mrs. J. W. Clark, as well as to Professor Hoppin and Mr. W. C. Schermerhorn.

Few readers are aware how large and important a part of the labor in such archaeological undertakings is given to the work of cleaning, piecing together, classifying, and studying the remains which an excavation has produced, before the results can be made public in a book. When I but mention, among other similar tasks, that about 265 baskets of vase fragments had to be cleaned, sorted, and, as far as possible, pieced together before they could be studied properly; that the same is true of thousands of small terra-cottas; that bronzes often were found in a shapeless mass in which all indication of their form, probable design, and inscribed marks were hidden by corrosion and incrustation, and that these bronzes had to be treated by a laborious and lengthy process of immersion in acids and of cleaning, before the original design and decoration

could be restored, — when I merely enumerate these facts, some idea will be gained of the important preliminary work necessitated before an account of the excavation could be presented in book form.

If such work always presents many difficulties, they were much enhanced in our case:

(1) The plan of our excavation could not be laid out on a large and permanent scale at the outset, and therefore provision could not be made for the proper storing and arrangement of the objects found that all might be kept together from one season to another.

(2) All our portable finds had to be transferred from Argos to Athens, where they were deposited in the National Museum. If such a transference of unclassified material — some in baskets, some in boxes, and some unpacked — contributed to confusion, the fact that in the National Museum we had twice to move from one room to another did not diminish these difficulties. In spite of these unavoidable inconveniences, I must here record the willingness on the part of the officials of the Museum to further our work, and I have much pleasure in thanking M. Cavvadias, the Director, and his distinguished assistants, MM. Stais, Tsountas, Castriotes, and Lionardos.

(3) Our difficulties in this stage of the work were still further increased by my desire to carry out the suggestion, informally made, of the Managing Committee of the School, that all the students should make, for purposes of study, direct use of the material furnished by the School's excavations, and should therefore be drawn into the actual work of sorting and cleaning. I complied with this suggestion for a time, but soon found that not only the students, unprepared for such work, gained but little advantage, but the labor of arranging and classifying the material was impeded and made much more difficult.

(4) Finally, although, after I had resigned the Directorship of the School, I came to Athens every year and laid down the system of classification to be followed, the great difficulty to which I have referred above made itself felt most banefully in this phase of the work; for the main supervision passed from one hand to another, and, in matters of detail, one new man had to take up the half-finished work of another at the point where it had been left.

All these difficulties recurred in another form when it came to the actual writing of the book. Not one of my assistants intrusted with the separate departments was present during the whole of the excavation, nor could they — with the exception of Professor Hoppin and Mr. De Cou — remain for any continuous time in Greece while elaborating their material and writing their chapters. Still, the principle I followed was to allow each member intrusted with a department as much independence as possible; and though I have arranged with each the general lines of his publication and have revised all the manuscripts, so that I may claim an organic unity of conception and execution for the book as a whole, I have not stood in the way of the expression of well-founded individual opinion, for which each collaborator deserves the credit and retains the responsibility. But, scattered as these workers were and changing their residence all over the globe, from

Egypt, Greece, and Italy to various parts of the United States, the extra labor which was entailed by the attempt to keep in touch with each man, the correspondence it necessitated, and the complications which increased the difficulties incidental to the publication of such work even under the conditions most favorable to speedy and facile publication, can easily be imagined.

The work of conducting all these matters through correspondence and the consequent delays were considerably increased by the fact that from England I had to communicate and arrange, not directly with the publisher and printer in America, but with a Committee which had to decide upon the ways and means of publication (which occupied some years), — a task to which the members devoted themselves with much sacrifice of time and labor.

The inevitable result was considerable delay in publication. For it is but right that I should state that my own manuscript (written more than four years ago), as well as that of Professor Hoppin, has been in the hands of the Committee on Publication, ready for the press, for nearly three years. Thus, besides the difficulty of returning, when correcting proofs, to a subject which had lost much of its freshness and some of its familiarity, it was impossible to take note of the results of similar excavations which have since been undertaken and are still in progress; while anticipations of important new light thrown upon archaeological inquiry by our finds and our publication, and for which a certain amount of honorable credit might be claimed, are not so manifest at this stage of publication. To recast the whole book was not possible. I have therefore left the manuscript as it stood, only adding a few footnotes with regard to work done since 1898.

I had hoped to publish both volumes at the same time, but owing to the delay of one contributor, we have determined to publish the first volume at once and to leave the second volume to follow within a few months. I regret this the more as Professor Hoppin's work on the Vases, which has been ready for press since 1899, will thus be kept back still longer.

In spite of these regrettable delays, I do not think that we have been exceptionally long in bringing the results of our excavations before the public after their completion in 1895. When it is remembered that an interval of seventeen years elapsed between the completion of the excavations of Olympia in 1879 and the official publication in 1896, and that the excavations of the Acropolis of Athens, completed in 1889, have not yet been published, our own publication must be considered a comparatively speedy one. Nor can I be unmindful of the kind help tendered me by all members of the Committee. But I must especially mention with gratitude that received from Professor Seymour and Professor Fowler, who looked over the manuscript of my General Introduction and offered useful criticism and correction; from Professor White, Professor Wheeler, and Mr. Robinson, who also made valuable suggestions at different stages; and, above all, from Professor Wright (assisted by Dr. Chase), who acted in my stead while the book went through the press in America, and without whose labor and kindness the publication must have been indefinitely delayed.

All other acknowledgments will, I hope, be found in their due place in the book.

The difficulties with which I have had to contend have been rehearsed above, and I have thought it right and just that they should be known. Painful and distressing as these conditions were, they vanish from the horizon now that the work is done, and I look back upon the scenes of labor behind me with unmixed pleasure and with deep gratitude, — gratitude first to the American School at Athens which, in 1889, when for nearly ten years I had been occupied with official work here in England, should have given me such brilliant opportunities of research in Greece and of direct association with an institution of learning belonging to my native home; gratitude to the University of Cambridge and to my own College here, in my adopted home, which allowed me to undertake work officially associated with another country, gave me the necessary leave of absence, and enabled me to retain the post in this University which I have now held continuously for twenty-two years. I venture to think that this example of international comity and generosity in the cause of science, of which I have been the immediate beneficiary, is not only a significant instance and result of the uniting power of science and learning, but is more directly an earnest of the confraternity of the two great English-speaking nations. That it should be in the cause of Hellenic culture that this international and fraternal spirit should manifest itself against the survival (if not revival) in our times of blind and savage international alienation and hatred sounds like the faint echo to the pledge of civilized humanity made in Athens more than two thousand years ago by Aeschylus in the Eumenides. That great drama seems to me to glorify, with all the consummate skill of artistic expression, the establishment of civilization and its laws, superseding the blind spirit of savagery, hatred, and revengeful fury. By the intercession of the great goddess of Wisdom is founded the Areopagus, the first court of law to embody the ideas of human justice; the hounding Erinyes are converted into Eumenides; by the persuasive and gladdening language of Reason, blending Truth and Beauty with Goodness, the vindictive Furies are tamed and are given a home in the centre of civilized life, violet-crowned Athens; and, adopting the tuneful and joyous measure of Attic poetry, they sing: —

Δέξομαι Παλλάδος ξυνοικίαν.

CHARLES WALDSTEIN.

King's College, Cambridge, *April* 30, 1902.

CONTENTS

GENERAL INTRODUCTION

BY CHARLES WALDSTEIN

PAGE

Antiquity and Significance of the Cult of the Argive Hera 1
Topography of the Argive Heraeum 10
The Early History of the Heraeum 25
The Evidence of the Finds as to the Age of the Heraeum 38
Terra-cotta Images 42
Vases 49
Bronzes 61
Engraved Stones 64
Egyptian Objects 64
History of Previous Excavations 64
Excavations by the American School at Athens 70
  Campaign of 1892 73
  Campaign of 1893 74
  Campaign of 1894 76
Note A: Strabo on the Argive Heraeum 85
Note B: View from the Site 86

THE GEOLOGY OF THE HERAEUM REGION

BY HENRY STEPHENS WASHINGTON

Geology of Argolis 91
Burial of Ancient Remains 94
The Heraeum Site and its Burial 97
Note on the Igneous Rocks found in the Excavations at the Heraeum 99

THE ARCHITECTURE OF THE ARGIVE HERAEUM

BY EDWARD LIPPINCOTT TILTON

Topography and Survey 105
Old Walls 108
Cyclopean Walls 109
The Old Temple Platform and the Old Temple 110
The Upper Stoa 112
The Northeast Stoa 114
East Building 116
The Second Temple 117
The South Stoa 127
The Steps 130
The West Building 131
The Northwest Building 134
The Roman Building 134

The Lower Stoa 136
Cisterns 136

MARBLE STATUARY FROM THE HERAEUM

BY CHARLES WALDSTEIN

Single Statues 140
Architectural Sculpture 144
The Metopes 146
The Pediments 148
The General Style of the Heraeum Marbles 153
The Period and School of the Heraeum Marbles 160
Polycleitus and the Heraeum Marbles 162
Description of the Plates 177

INSCRIPTIONS FROM THE ARGIVE HERAEUM

BY RUFUS BYAM RICHARDSON AND JAMES RIGNALL WHEELER

PART I. Inscriptions on Stone 197
PART II. Stamped Tiles 216

Index 225

ILLUSTRATIONS IN THE TEXT

FIGURE PAGE
1. Map of the Region about the Heraeum. Enlarged from Steffen's *Karten von Mykenai* (Argolis), with additions 7
2. General Plan of the Site: actual state after excavation 9
3. The Argive Plain, with the Second Temple in the foreground 11
4. The Argive Plain, with excavated remains of the Old Temple in the foreground 12
5. View of Mount Euboea, with South Stoa in the foreground 13
6. Site of Heraeum from the East 14
7. Site of Heraeum from the Southwest 15
8. Man-hole and Rock-cut Conduit at Stream-bed of Revma-tou-Kastrou 17
9. Drum and Capital from Second Temple, as found behind the South Stoa 19
10. Foundations of the Second Temple, showing statue-bases at the eastern end 21
11. *a*, *b*, Two Coins of Argos. The Hera of Polycleitus 22
12. Coin of Argos. The head of Polycleitus's Hera 22
13. Early Shaft-tomb, containing vases of dull-colored "Mycenaean" style 41
14. Beehive Tomb, near the Heraeum, on the road to Mycenae 42
15. Early Stone "Pillar Image." From the Heraeum 43
16. Primitive Terra-cotta Figurine. From the Heraeum 43
17. Early Female Figure, showing development of drapery. From the Heraeum 44
18. Early Seated Figure. From the Heraeum 44
19. Mycenaean Type of Terra-cotta. From a Tomb near the Heraeum 45
20. Figure of the "Dipylon" Class. From the Heraeum 46
21. Figure of Advanced Argive Style (with human face). From the Heraeum 47
22. Mycenaean Vase, with dull unglazed color. From Furtwängler and Loeschcke, *Mykenische Vasen*, pl. xxiv. No. 175 50
23. Mycenaean Vase (from Ialysus), naturalistic, with lustrous glaze. From Furtwängler and Loeschcke, *Mykenische Vasen*, pl. v. No. 281 50
24. Mycenaean Vase, with lustrous glaze, conventional. From Furtwängler and Loeschcke, *Mykenische Vasen*, p. 29, fig. 17 51
25. Dipylon Vase. From *Mon. d. Inst.* IX. pl. 39 52
26. Argive (Proto-Corinthian) Vase, Linear style. From the Heraeum 53
27. Argive (Proto-Corinthian) Vase, later style. From the Heraeum 53
28. Mycenaean Tombstone, with carved and painted decoration. From Tsountas, Ἐφημερὶς Ἀρχαιολογική, 1896 54
29. Examples of Incised Linear Ornament. From the Heraeum 55
30. Examples of Painted Linear Ornament. From the Heraeum 57
31. Iron Bars excavated at the Heraeum 63
32. Colonel Mure's Plan of the Site of the Heraeum. From his *Journal of A Tour in Greece*, vol. I. p. 179 65
33. General Gordon's Plan of the Site of the Heraeum. From Leake's *Peloponnesiaca*, 1846 66
34. Rangabé's Plan of the Site of the Heraeum. From his *Ausgrabung beim Tempel der Hera unweit Argos*, 1855 67
35. Bursian's Plan of his Excavations 68
36. The Second Temple Platform, before the American excavations 71
37. Site of the Old Temple Platform, before excavation 72
38. The Second Temple, at the close of the season of 1892 73
39. Work on the Slope between the Old Temple and the Second Temple, in the second season 75

40. Piece of Wall from West Building, first appearance 76
41. Corner of the Second Platform, with front of East Building in right foreground . . . 78
42. The Roman Building, with Southwest Stoa on the left, and portion of West Building in the foreground 80
43. First Trench dug at South Stoa 81
44. South Stoa, after excavation 82
45. West Building, after excavation 83
45a. Section back of South Stoa, 1894 98
46. View of the Argive Heraeum from the North 105
47. Argive Heraeum: View of the site from the east 106
48. Argive Heraeum: View of the site from the west 107
49. View looking North upon the Cyclopean Wall and Northeast Stoa 109
50. Old Temple Plan: restored 111
51. Argive Heraeum: Capitals, and details of their profiles drawn to a large scale 113
52. Columns. From the Argive Heraeum 114
53. Argive Heraeum: Stone with doves carved in relief 115
54. Argive Heraeum: Stone carved with fish and waves, by incised lines 115
55. View looking Northeast upon the East Building and the retaining wall on its northwest side 117
56. Argive Heraeum: East Building, restored 118
57. View from the Southeast, looking upon the flight of steps; the South Stoa and the Second Temple above 119
58. Actual State of a Stylobate Stone of the Second Temple 120
59. Front Elevation of Second Temple. Restored by Edward L. Tilton 121
60. Column and Stylobate Stone of Second Temple 122
61. Marble Cyma-moulding and Lion's Head Water-spout. From Second Temple: one fifth the actual size. Measured and restored by Edward L. Tilton 124
62. Marble Lion's Head Gargoyle and Water-spout. From Second Temple: one fifth the actual size 125
63. Metope from the Second Temple. Restored from fragment 126
64. Argive Heraeum: Restored Section of Second Temple, showing statue of Hera 127
65. View looking East on the South Stoa 129
66. West Building; free restoration of the elevation 131
67. View looking Northwest upon the Northwest Building 133
68. View looking West from the Northwest Building 134
69. Roman Building: plan and elevation restored 135
70. Fragment of a Stone Pillar 139
71. Fragments of Archaic Sculpture 140
72. Marble Fragments, probably part of a Female Figure of the Graeco-Roman period 141
73. Late Torso, found on the South Slope 143
74. Miscellaneous Marble Fragments. From the Argive Heraeum 144
75. Marble Fragments, as arranged for sorting on the floor of a Room in the Central Museum, Athens 147
76. Marble Image, with hand grasping it at the back. Probably from the Western Pediment of the Second Temple 149
77. Fragment of a Metope, with pelta 150
78. Corner of the Room in the Central Museum, Athens, containing fragments of drapery. From figures in the round, probably from the pediments of the Heraeum 151
79. Fragment of a Leg resting upon a Cushion. Probably from a pediment of the Heraeum 152
80. Fragment of a Pedimental Figure. From the Heraeum 153
81. Legs and other Fragments. Probably from the pediments of the Heraeum 154
82. Fragments from the Metopes: Hands that hold swords and spears, and feet 155
83. Fragments from the Metopes, illustrating chiefly the sharp yet delicate cutting of the folds in drapery 156
84. Small Marble Head from Brauron. In the possession of Professor Furtwängler . . . 166
85. Head of one of the Korai. From the Erechtheum 167
86. Head of the Doryphorus (Naples) 168
87. Head of the Diadumenus (Dresden) 169

88. *a*, The Lines of the Mouth. From the Heraeum Metopes 179
88. *b*, The Lines of the Mouth. In the Lemnian Athena 179
89. *a*, Profile of the Upper Lip. From the Heraeum Metopes 180
89. *b*, Profile of the Upper Lip. In the Lemnian Athena 180
90. Miscellaneous Marble Fragments. From the Heraeum 194

PLATES

Plate		Page
Frontispiece.	Head of Hera: in profile. Probably from the Western Pediment of the Second Temple	189
I.	Details of the Second Temple, and Cyma-mouldings from the South Stoa	104
II.	View of the Second Temple, looking south from the Cyclopean Wall	106
III.	View of the Site of the Argive Heraeum from the South	106
IV.	General Plan of the Site: actual state after excavation	106
V.	General Plan of the Site: restored	108
VI.	Restoration of the Argive Heraeum in Perspective. In colors	108
VII.	View looking Northeast upon the Flight of Steps	108
VIII.	Old Temple Platform: actual state	108
IX.	The Old Temple and the North and Northeast Stoas: actual state and restoration	108
X.	View looking Southwest upon the Old Temple and its Platform	110
XI.	Section through the Site from North to South: actual state and restoration	110
XII.	Plan of North Stoa, Northeast Stoa, and East Building: actual state	112
XIII.	Plans and Elevations of Various Walls	116
XIV.	View looking Southwest upon the Second Temple. From the Cyclopean Wall	118
XV.	View looking Southeast upon the West Building	118
XVI.	Second Temple: actual state	118
XVII.	Plan of the Second Temple: restored	118
XVIII.	Side Elevation of the Second Temple: restored	118
XIX.	Outline Plan and Elevations, showing the proportions of the Second Temple	120
XX.	South Stoa and Steps leading to Upper Level: actual state	126
XXI.	South Stoa: Plan and Elevation. Restored	128
XXII.	South Stoa: Section and Details. Restored	128
XXIII.	Painted Terra-cotta Architectural Fragments	130
XXIV.	West Building: actual state	130
XXV.	View looking Southwest upon the West Building	132
XXVI.	West Building: plan and details	132
XXVII.	Northwest Building: actual state	134
XXVIII.	Roman Building and Lower Stoa: actual state	134
XXIX.	Roman Building: floor-construction, and fragments from other buildings	134
XXX.	Metope from the Heraeum	177
XXXI.	Three Heads from the Metopes. Two views of a youth's head; head of Amazon; head of a warrior	178
XXXII.	Three Female Heads from the Metopes	181
XXXIII.	Head of Athena, from the Metopes; portions of two heads in the round	183
XXXIV.	Torso of Nude Youth from the Metopes	185
XXXV.	Three Draped Torsos from the Metopes; warrior with breastplate; an Amazon; another female torso	187
XXXVI.	Head of Hera: three views. Probably from the Western Pediment	189
XXXVII.	Torso of a Draped Female Figure from the Pediments	191
XXXVIII.	Fragments of Drapery from the Pediments	192
XXXIX., XL.	Additional Marble Fragments from the Metopes	193
XLI.	Additional Fragments of Drapery and Feet. Probably from the Pediments	193

*** *The Plates are described at the pages indicated, but Plates II.–XXIX. are grouped after page* 135, *and Plates XXX.–XLI. after page* 194.

GENERAL INTRODUCTION

GENERAL INTRODUCTION

By CHARLES WALDSTEIN

The Argive Heraeum was one of the most important sanctuaries of ancient Hellas; indeed, its position in the life of the ancient Greeks, and more especially its relation to and illustration of the earliest history of the Hellenic people, make it appear to have been at one time the foremost sanctuary of Peloponnesus, perhaps of the whole of Greece.

Archaeologically, too, the Heraeum holds a unique position in regard to the early history of Greece, and the finds made on this site have in consequence a special importance. For while similar objects have been found at Hissarlik, on the Islands, at Tiryns, and Mycenae, their relation to the place in which they were found does not give them the same significance as pertains to the objects from the Heraeum. For the Heraeum lay not only in Greece proper, but was the centre of the earliest Greek life as such, — which cannot be said for Hissarlik or even for the Islands; while the continuity of its history transfers the element of continuity to the objects there found, — and this cannot be said for Tiryns or Mycenae, each of which represents definite and distinct periods only.

To write a complete history of this sanctuary would be to write the history of the Argolic plain.[1] For while Tiryns, Mycenae, and Argos, in turn, had political preëminence in this district, the Heraeum always remained the chief religious centre. And as these three cities, in the early ages, were the most important political centres of Hellenic civilization, the history of the Heraeum is an important part of the history of Greece.

Whenever these three political centres — Tiryns, Mycenae, and Argos — were distinct and separate states, they clashed and struggled for preëminence. In the earliest days, indeed (according to tradition the days of Phoroneus and his successors down to Abas), there was unity of dominion over the "Argive" land; but, as we shall see, the subdivision began under the sons of Abas; and from this time on, until the final supremacy

[1] A clear definition of the name Argolis was not given to the land before Roman times; though Argos, with all the confusing vacillation in the use of this term to which I shall recur, certainly designated the same district in the earliest period. It comprised three districts: (1) the eastern peninsula, Acte, (2) the northern slopes from the mountains to the Gulf of Corinth, and (3) the southern slope from these mountains down to the gulf of Nauplia. The third portion is Argolis proper. The plain, bounded by the Arachnaean range on the east and the mountains of Artemisium on the west, — which converge at the northern end, while to the south the plain opens out to the gulf, — was called Argos in the earliest prehistoric time, and is the district to which we shall specifically apply the term Argive. The original meaning of the word Ἄργος must have been lost to the later Greeks, so that Stephanus Byzantinus explains it as σχεδὸν πᾶν πεδίον κατὰ θάλασσαν. But this meaning is too restricted, as is evident from the existence of the Orestian Argos in the interior of Macedonia, the Pelasgian in Thessaly, and the modern survival of the term to designate small plains surrounded by mountains in the interior of several islands. (Cf. Kiepert, *Lehrbuch der Alten Geographie*, p. 271.) This Argive plain is of light chalk soil, has much less rainfall than the western coast of Peloponnesus, and is thus subjected to drought (πολυδίψιον Ἄργος). The mountain streams run dry in the summer; but in the rainy season all combine to swell the Inachus. To sink wells is therefore of great importance in the present day and was so in the earliest times, as is evident from the myths of the Danaides. Danaus (explained as ξηρός by the grammarians) is the inventor of the art of digging wells, and as Archegetes of the Danaans, the inhabitants of the plain, is himself a representative of the plain. Through this artificial irrigation by means of wells, the plain was and is fertile in corn and pasture, πολύπυρον, ἱππόβοτον Ἄργος.

of the city of Argos, there was rivalry between the several cities. But through all periods the one point of union in the Argolid amid all the elements of rivalry and disruption, even when the ties of blood and common descent were of no cohesive efficiency, was this central sanctuary, which represented at once the oldest as well as the most continuously ruling religious cult in the district, — the worship of Hera. Apparently only during one short period was the worship of Hera superseded by another in the city of Argos, namely, when the Dorian supremacy was established and when the cities which fell to the "lot of Temenus" formed a kind of confederacy under the direction of Argos,[1] with the sanctuary of Apollo Pythaeus, at the foot of the Larisa of Argos, as the centre. The Argives maintained that theirs was the oldest sanctuary of Apollo Pythaeus;[2] even in later times the Argives collected contributions for this sanctuary,[3] and made it the repository of treaties.[4] But the supreme importance which the Heraeum had for the city of Argos[5] from the earliest to the latest times is amply proved, among other evidence, by the fact that the Argives always reckoned their time by the years of office of the priestesses of Hera, and that these chronological tables were used also elsewhere in Greece.[6]

The cult of Hera at our Heraeum was thus the principal worship of the city of Argos, and before the preëminence of the city of Argos in the Argive district, the Heraeum was the chief sanctuary of Mycenae. As Strabo puts it,[7] it was the sanctuary used in common by both these cities.

Not only was Hera the earliest divinity for the peoples which dwelt in the Argive plain, but the Argive Heraeum presented the earliest form of this divinity and her worship in ancient Hellas.

In Homer, Hera is called Ἀργείη.[8] In the Iliad (iv. 51), Argos, Sparta, and Mycenae are her favorite cities. The oldest of the sanctuaries of Hera mentioned at Sparta is evidently[9] that of Ἥρα Ἀργεία, said to be "founded by Eurydice, daughter of Lacedaemon and wife of Acrisius, the son of Abas." Thus not only the attribute "Argive," but also the tradition of its original dedication, through the Argive kings Acrisius and Abas, immediately point to its Argive derivation.

No doubt in this use of the term Ἄργος and the attribute Ἀργείη, the ancient Argive district, including, both geographically and historically, Tiryns and Mycenae, is meant, and not the city of Argos.[10] The city of Argos itself had four — possibly six — separate sanctuaries of Hera,[11] each with a separate cult. Still, as we have seen, our Heraeum remained its chief sanctuary, as it was the oldest.

[1] Herod. I. 82; Strabo VIII. 3. 33.

[2] Paus. II. 35. 2 (Telesilla, *Fragm.* 3).

[3] Thucyd. V. 53 and Diod. XII. 78. 1. Le Bas, *Inscr. rec. à Argos*, No. 8.

[4] Thucyd. V. 47. 13.

[5] It looks also as if at one time the Poseidon cult endangered Hera's supremacy, which may be inferred from the legend (which probably has some foundation in the earliest ethnological history of the land) related by Pausanias (II. 15. 5, 22. 4; cf. also Plut. *Q. Conv.* xi. 6). Compare the similar struggle between Athena and Poseidon at Athens. The division of national patronage between her and Zeus Nemeios (Paus. IV. 27. 6) is evidently of later origin and naturally arises out of the *ἱερὸς γάμος* and its special cult.

[6] Thuc. II. 2, IV. 133. For references to Hellanicus of Mytilene, his Ἱέρειαι as well as the *Atthis* and *Persica*, see Busolt, *Gr. Geschichte*, I. pp. 151 ff.

[7] *τότε Ἄργος καὶ τὰς Μυκήνας, καὶ τὸ Ἡραῖον εἶναι κοινὸν ἱερὸν τὸ πρὸς ταῖς Μυκήναις ἀμφοῖν.* Strabo VIII. 6. 10.

[8] Hom. *Il.* v. 908; cf. Hesiod, *Theog.* 12; Aesch. *Suppl.* 299. Pind. *Nem.* x. 2, certainly refers to the Heraeum when he says Ἄργος Ἥρας ἕδρα θεσπρεπές. Cf. also Eurip. *Tro.* 23, *Heracl.* 349.

[9] Paus. III. 13. 8. The temple mentioned by Pausanias (III. 11. 9) as in the market-place, which she apparently held in conjunction with Apollo, as well as that of Hera Aphrodite (which may be the same as the Argeia) and Hera Aigophagos (III. 13. 8 and III. 15. 9) are evidently later.

[10] See NOTE A.

[11] Cf. Roscher in Roscher's *Lexicon d. Gr. and Röm. Mythologie*, I. pp. 2075 ff.

There can hardly be a doubt that all the other cults of Hera, such as those of Samos, Corinth, Olympia, Attica, Boeotia, Euboea, those in Thrace, on Lesbos, and many other islands of the Aegean, as well as the important cults of Sicily and Magna Graecia, e. g. at Croton and on Eryx, are all directly derived from the Argive cult.[1] The most important of all these other cults, after that of the Heraeum (in later times perhaps surpassing this in splendor), was the famous sanctuary on Samos. But all the evidence goes to show that this Samian cult was derived and imported from Argos. Tradition had it[2] that the Samian temple was founded by the Argonauts, who brought their sacred image with them from Argos. The Samians, of course, maintained that Hera was born on their island, on the banks of the Imbrasus or Parthenius,[3] under a willow (λύγος), which was preserved in the Samian Heraeum in the times of Pausanias. But the development of the Epidaurian myths concerning the birth of Asclepius, a divinity evidently imported from the north, and many similar instances in ancient mythology, show too well the prevailing tendency to make a divinity and a cult autochthonous, to allow us to attach much weight to an isolated tradition. Moreover, this tradition may have arisen merely out of a confusion of the traditions grouping round the λύγος, itself again a survival of a still more ancient rite of which the original meaning was lost. According to Menodotus of Samos[4] the Samian Heraeum is an Argive foundation by Admete, daughter of Eurystheus. We stand on much firmer historical ground when we hear that the first human-shaped (ἀνδριαντοειδές) image of Hera was introduced into Samos from the Argolid (Epidaurus) *ἐπὶ Προκλέους ἄρχοντος*,[5] i. e. about the time of the Ionian migration. At all events, the change from the *board* to the *image* assigned by Clement to the immigration of Procles seems to me to imply the importation by him of the cult of his house. These traditions, all of which indicate the dependence of the Samian on the Argive Heraeum, while this dependence is reversed in none, establish the primacy of our sanctuary and cult.

The nature and evolution of the Argive Hera and her worship is a question of great complexity, and would demand an elaborate exposition.[6] In studying carefully all the indications in ancient authors concerning this divinity, the customs and rites of her worship, and the archaeological evidence concerning her sanctuaries, we see that long before she had been defined by the Homeric "theology" in the Olympian circle of divinities as the spouse of Zeus, she was the supreme goddess of an earlier people, or of earlier peoples. Whether we call the people who originally worshiped her as Ἥρα Πελασγίς,[7] Pelasgians, or by any other name, this fact remains: that all the

[1] Cf. O. Müller, *Dorier*, I. 396.

[2] Paus. VII. 4. 4.

[3] *Schol.* Apoll. Rhod. I. 187; Appuleius, *Met.* 6. 4.

[4] *Ap.* Athen. XV. 672 a–e.

[5] Clem. Alex. *Protr.* IV. 46. See infra the evidence furnished by the terra-cottas found in our excavations.

[6] Most of the passages relating to Hera and the cult of Hera will be found in Roscher's able monograph on *Juno und Hera*, 1875, and his article in Roscher's *Lexicon*, as well as an account of the literature which deals with the subject. His work, however, seems somewhat vitiated by his tendency to consider Hera above all as a "moon-goddess," which, so far as her primitive nature is concerned, is untenable. I would also make special mention of two older monographs which enumerate the greater part of the literature on the subject of her cult, namely, R. Förster's *Die Hochzeit des Zeus und der Hera* (Breslau, 1867), and *Ueber die ältesten Herabilder* (1868). Of course for her cultus, Iwan Müller's *Handbuch* (vol. v. part 3) on *Gr. Sakralalterthümer*, by Steugel, A. Mommsen's *Heortologie* and *Feste Athens*, and the older works, K. Fr. Hermann's *Gottesdienstl. Alterthümer*, and Schömann's *Gr. Alterth.*, are important. In the Argonautic tales Jason is also founder of temples of Hera: Strabo VI. 1. 1; Paus. VII. 4. 4.

[7] I leave it to my friends, Professor Ridgeway and Mr. J. G. Frazer, to enlarge upon the ethnological significance of this female deity, as well as to explain further the interesting features in the Samian rites, the *ἱερὸς γάμος*, by means of the excellent methods of comparative mythology which Mr. Frazer has applied to good purpose.

indications seen in a careful study of the material now before us point to Hera among these early peoples, not as the spouse of the supreme King, but as herself the Queen,[1] though she may have had her consort. Had these peoples dwelling in the Argolic plain remained in supreme and unbroken possession of the land, and retained the sway over it, and had Argolis maintained its hegemony over the Greek peoples in historic times, the Heraeum might have become the Olympia of Hellas, and would have brought the Greek peoples together in the highest form of national federation, as in the oldest Greek colonies the cultus of the Lacinian Hera at the promontory near Croton brought all the Greek communities of Magna Graecia together at her festival.[2] We might then have had a Panhellenic Hera as the presiding Hellenic divinity; and Zeus might possibly have found his place as Consort to the Queen of the gods.

Of this primitive divinity we can single out several clear characteristics, some of which the subsequent adaptation to the prevailing theology accentuated or repressed.

That Hera was, as we have said, the chief divinity of the peoples who dwelt in the Argolic plain, and of those who were derived from them, is evident from the simple fact that her worship remained supreme in this region through all times. She is then the chief guardian of the city and the citadel, and from this conception must be derived the epithet Acria, which maintained itself at Argos[3] and places which derive their cult from Argolis.[4] For as the selection and fortification of such a citadel was one of the first acts of a community which had come to occupy fixed habitations, so the consecration to the national divinity would be a necessary consequence. There can be but little doubt that Tiryns and Midea had a worship of Hera on their citadels; though the importance of these cities and, in consequence, of the worship on their citadels was destroyed at a comparatively early date.

Thus we may suppose that the Argive Hera guarded the land and the life and prosperity and presided over the occupations of the people who spread about the foot of this fortified stronghold. The dwellers in the *ἱππόβοτον* and *πολύπυρον* Argive plain clearly led a pastoral and agricultural life. The name Euboea[5] given to the hillock upon which the Heraeum stood clearly points to it as a favorable site for the grazing of cattle, and the intimate connection with the cow, the sacred herds at the temple,[6] the position of the white cows in her rites,[7] and perhaps the immediate relation of the *βοῶπις* goddess herself to the cow into which she is once changed and with which the myth of Io is so curiously connected, and finally the transplanting of these associations into the Hera-cult of other districts, — all this clearly indicates the original life of the early

[1] *C. I. A.* 172 *κλειδοῦχος βασιλήδος Ἥρας*. Cf. Pind. *Nem.* i. 59 (39); *Hom. Hymn.* xii. 1 seq.; Nonnus, *Dionys.* viii. 207; Kaibel, *Epig.* 268. 3; 822 a, 7; Kinkel, *Epic. Graec. Fragg.* p. 211.

[2] Aristot. *Mirab.* 96; Strab. VI. 1. 11 (Kramer); Dion. Perieg. 371.

[3] Paus. II. 24. 1; Hesych. *s. v.* *ἀκρία*. Cf. Panofka, 'Die Gottheiten auf Larissa, der Hochburg von Argos,' *Abh. d. Berl. Akad.* 1854, pp. 552–554. It is a noteworthy fact that the district of the Heraeum was divided into Euboea, Acraea, and Prosymna; Paus. II. 17.

[4] Among these the most important is the one on the Acropolis of Corinth (Apollod. I. 9. 28; Eurip. *Med.* 1379; Musaeus *ap. Schol.* Eur. *Med.* 10; Didymus and Creophylus *ap. Schol.* Eur. *Med.* 273. Another very ancient sanctuary of Hera Acraea lay between Lechaeum and Pagae, probably the same as the one mentioned in Strabo (VIII. 6. 22), which was an ancient oracle, and thus points to a primitive goddess of the land. Liv. XXXII. 33; Xen. Hell. IV. 5. 5. Cf. Bouché-Leclercq, *Hist. de la divination dans l'Antiq.* II. pp. 395 f.

[5] Paus. II. 17. 1. The whole island of Euboea was sacred to Hera (Apoll. Rhod. iv. 1138), and here, too, the *ἱερὸν ἄλσος* takes an important place. She is especially associated with the mountains Oches and Dirphys. It is also worthy of note that similar importance is given to her, and similar rites are found in Boeotia, especially on the Cithaeron (Eurip. *Phoen.* 24). Cf. Cephal. *ap.* Malal. p. 45, and *Schol.* to 24 as well as 1760. Cf. also Plut. *ap.* Euseb. *Pr. Ev.* III. 83; Paus. IX. 2, 7; III. 1–9.

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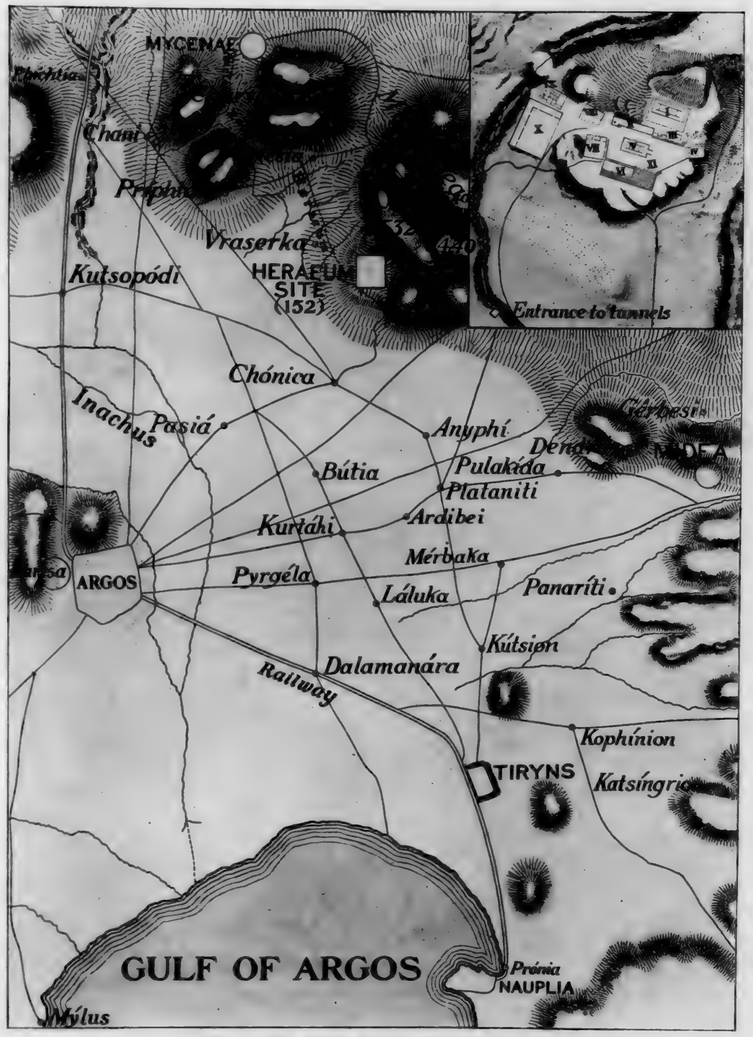


FIG. 1. — MAP OF THE REGION ABOUT THE HERAEUM.
Enlarged from Steffen's *Karten von Mykenai* (Argolis), with additions. Heights in metres. The rectangle incloses an enlarged section of the Heraeum Site as indicated on the Map (see Fig. 2).

indications seen in a careful study of the material now before us point to Hera among these early peoples, not as the spouse of the supreme King, but as herself the Queen,[1] though she may have had her consort. Had these peoples dwelling in the Argolic plain remained in supreme and unbroken possession of the land, and retained the sway over it, and had Argolis maintained its hegemony over the Greek peoples in historic times, the Heraeum might have become the Olympia of Hellas, and would have brought the Greek peoples together in the highest form of national federation, as in the oldest Greek colonies the cultus of the Lacinian Hera at the promontory near Croton brought all the Greek communities of Magna Graecia together at her festival.[2] We might then have had a Panhellenic Hera as the presiding Hellenic divinity; and Zeus might possibly have found his place as Consort to the Queen of the gods.

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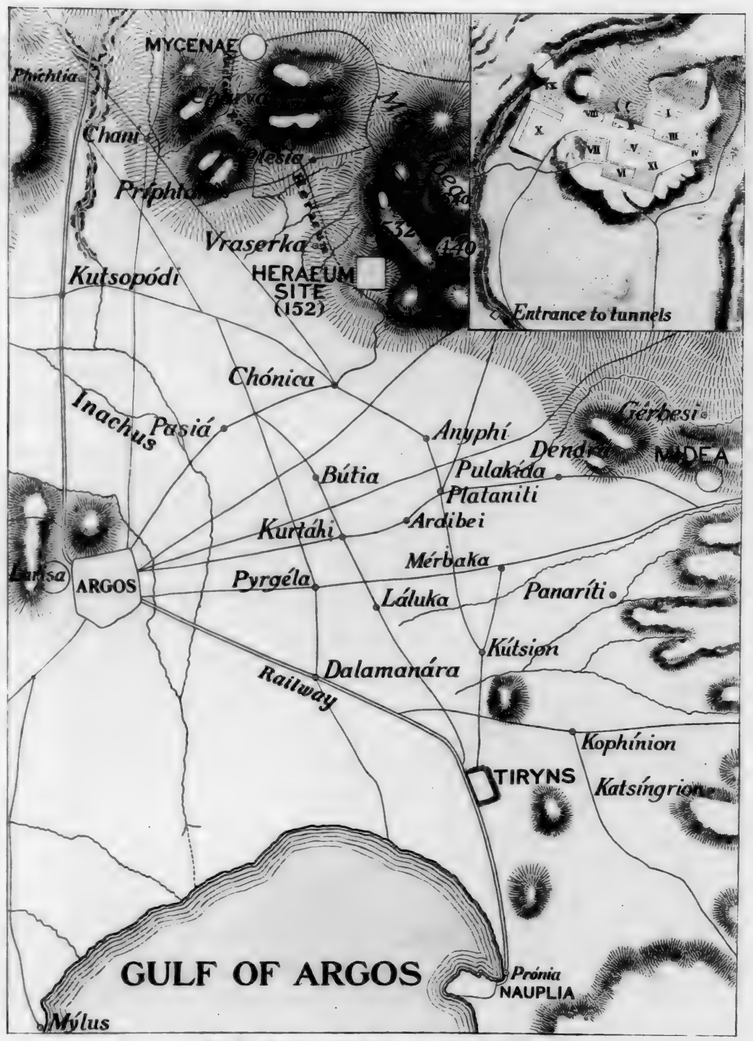


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Hera-worshipers in the Argive plain. Perhaps also the fact that sacred horses were kept at Argos for Hera points to the same conclusion.[1] As to Hera as the protectress of vegetation, the epithet Ἀνθεία[2] and the ceremonies connected with this aspect of the divinity, as well as the survivals of ceremonies connected with the hiding of the image under the λύγος at Samos and various customs in the ἱερὸς γάμος — all make her out as a goddess of vegetation and vernal power.

But besides presiding over the land and the occupation of its inhabitants, Hera guarded and regulated the social and domestic life of her people. By itself the fact that the chief divinity of these early peoples was a goddess indicates that the woman and the mother may have held a dominant position in the family and tribal history of these communities, and, in the beautiful story of Cleobis and Biton, and the filial piety which it illustrates, we may see, perhaps, a survival of the supreme position occupied by the mother in Argive tradition. In the ἱερὸς γάμος or sacred marriage, which formed a central feature of the great festival of Hera at Argos and elsewhere,[3] her relation to Zeus appears to reflect a change of classification in Greek theology in the process of organization to which subsequent ages led, as well as corresponding social changes in the domestic and tribal life of the Greek nation; but that side of Hera which makes her preside over the domestic and family life, as the guardian of women and of marriage, always remains prominent.

The ceremonies in connection with this ἱερὸς γάμος[4] were reproductions of the actual marriage ceremonies of ancient Greece, in which probably some of the forgotten customs of a ruder nature-worship of agricultural peoples survived. No doubt the young affianced couples made dedications at this temple (and hence may have come many of the votive offerings found in our excavations), as the affianced girl visited the temple and performed certain functions before the wedding. Hera was thus also the protectress of maidens.[5] But it was chiefly to the mother, the child-bearing mother, that Hera extended her helpful protection; and this she does as Hera Eileithyia. There is but little doubt in my mind that, as in the relation of Nike to Athene, so here Eileithyia was Hera in one of her functions, and only later developed into a separate divinity. Most of her temples in other parts of Greece and those of Juno in Italy were centres of a worship where the goddess responded to the prayers and offerings of the women who required such help; and thus the Heraeum of Argos, with its baths, formed a kind of special sanitarium for women in their troubles.[6]

Besides the ceremonies connected with the ἱερὸς γάμος at the Heraeum, there was a great public offering of cows, of which perhaps even one hundred were offered up at the chief festival, and those cattle were probably taken from the temple-herds sacred to Hera.[7] The feast was thus called ἑκατόμβαια.[8]

[1] Diodor. IV. 15.

[2] Paus. II. 22. 1; cf. Pollux IV. 78, Cometas *Anthol. Gr.* ix. 586.

[3] Hermione, Attica, Boeotia, Cithaeron (the Daidala), Euboea, Samos, Leabos, Cyme, Cnossus, etc.

[4] For the numerous passages on this subject we can best refer to R. Förster, *Die Hochzeit des Zeus und der Hera*, cited above, and Roscher, *Lex.* I. pp. 298 ff.

[5] A very curious and significant feature of the myth is that she herself, after bathing in the fountain Canathus at Nauplia every year, became a virgin (Paus. II. 38. 2; *Schol.* Pind. *Ol.* vi. 149), and that as Παρθένος she protects maidens.

[6] Cf. what I have said in the preliminary publication (*Excavations of the American School of Athens at the Heraion of Argos*, 1892), p. 20, and note the terra-cotta, Pl. viii. No. 19, as well as No. 8, which corresponds to another holding the bow as an attribute of Hera Eileithyia — the latter dating from about B. C. 500.

[7] Pind. *Nem.* x. 22, Βουθυσίαν Ἥρας; Parthen. *Narr.* 13; Eurip. *Electr.* 172 seq.; Sen. *Agam.* 364.

[8] *C. I. G.* 1515 a, l. 10, b, l. 8, 1715; *Schol.* Pind. *Ol.* vii. 152; cf. also the customs at the Olympian Heraeum and the prize of olive wreath and part of the victim sacrificed to the maiden runners (Paus. V. 16 and 17).

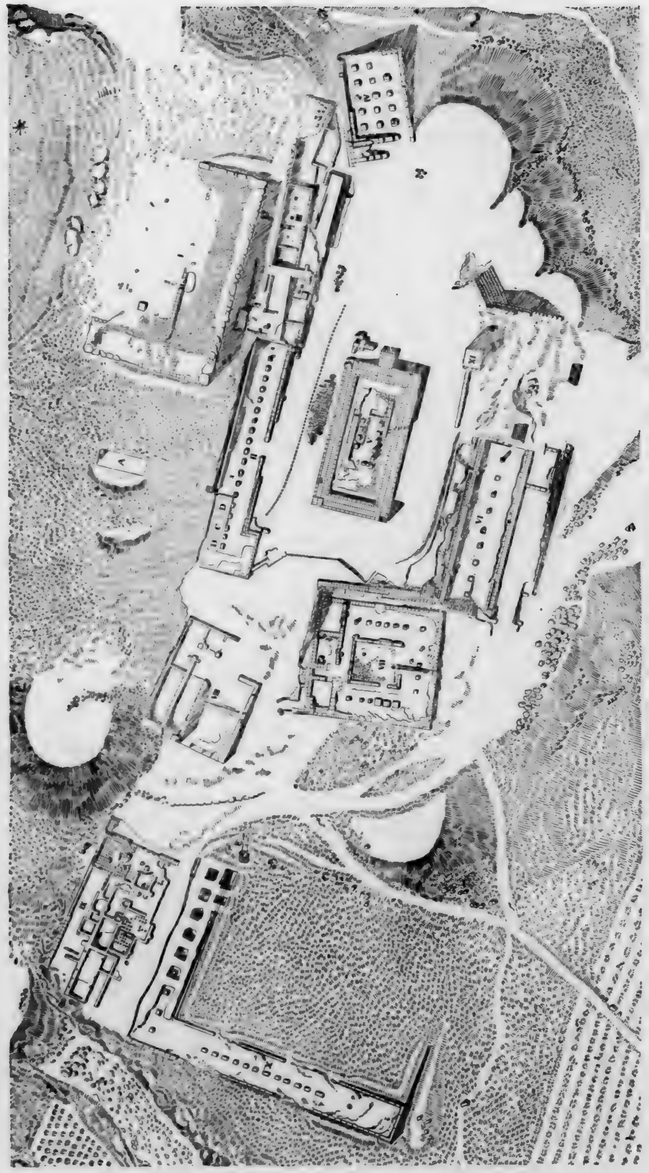


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I. Old Temple; II. North Stoa; III. Northeast Stoa; IV. East Building; V. Second Temple; VI. South Stoa; VII. West Building; VIII. Northwest Building; IX. Roman Building; X. Lower Stoa; XI. Modern Phylakeion. A, B, C, D, E, F, Cisterns.

Hera-worshipers in the Argive plain. Perhaps also the fact that sacred horses were kept at Argos for Hera points to the same conclusion.[1] As to Hera as the protectress of vegetation, the epithet Ἀνθεία[2] and the ceremonies connected with this aspect of the divinity, as well as the survivals of ceremonies connected with the hiding of the image under the λύγος at Samos and various customs in the ἱερὸς γάμος — all make her out as a goddess of vegetation and vernal power.

But besides presiding over the land and the occupation of its inhabitants, Hera guarded and regulated the social and domestic life of her people. By itself the fact that the chief divinity of these early peoples was a goddess indicates that the woman and the mother may have held a dominant position in the family and tribal history of these communities, and, in the beautiful story of Cleobis and Biton, and the filial piety which it illustrates, we may see, perhaps, a survival of the supreme position occupied by the mother in Argive tradition. In the ἱερὸς γάμος or sacred marriage, which formed a central feature of the great festival of Hera at Argos and elsewhere,[3] her relation to Zeus appears to reflect a change of classification in Greek theology in the process of organization to which subsequent ages led, as well as corresponding social changes in the domestic and tribal life of the Greek nation; but that side of Hera which makes her preside over the domestic and family life, as the guardian of women and of marriage, always remains prominent.

The ceremonies in connection with this ἱερὸς γάμος[4] were reproductions of the actual marriage ceremonies of ancient Greece, in which probably some of the forgotten customs of a ruder nature-worship of agricultural peoples survived. No doubt the young affianced couples made dedications at this temple (and hence may have come many of the votive offerings found in our excavations), as the affianced girl visited the temple and performed certain functions before the wedding. Hera was thus also the protectress of maidens.[5] But it was chiefly to the mother, the child-bearing mother, that Hera extended her helpful protection; and this she does as Hera Eileithyia. There is but little doubt in my mind that, as in the relation of Nike to Athene, so here Eileithyia was Hera in one of her functions, and only later developed into a separate divinity. Most of her temples in other parts of Greece and those of Juno in Italy were centres of a worship where the goddess responded to the prayers and offerings of the women who required such help; and thus the Heraeum of Argos, with its baths, formed a kind of special sanitarium for women in their troubles.[6]

Besides the ceremonies connected with the ἱερὸς γάμος at the Heraeum, there was a great public offering of cows, of which perhaps even one hundred were offered up at the chief festival, and those cattle were probably taken from the temple-herds sacred to Hera.[7] The feast was thus called ἑκατόμβαια.[8]

[1] Diodor. IV. 15.

[2] Paus. II. 22. 1; cf. Pollux IV. 78, Cometas *Anthol. Gr.* ix. 586.

[3] Hermione, Attica, Boeotia, Cithaeron (the Daidala), Euboea, Samos, Lesbos, Cyme, Cnossus, etc.

[4] For the numerous passages on this subject we can best refer to R. Förster, *Die Hochzeit des Zeus und der Hera*, cited above, and Roscher, *Lex.* I. pp. 298 ff.

[5] A very curious and significant feature of the myth is that she herself, after bathing in the fountain Canathus at Nauplia every year, became a virgin (Paus. II. 38. 2; *Schol.* Pind. *Ol.* vi. 149), and that as Παρθένος she protects maidens.

[6] Cf. what I have said in the preliminary publication (*Excavations of the American School of Athens at the Heraion of Argos*, 1892), p. 20, and note the terra-cotta, Pl. viii. No. 19, as well as No. 8, which corresponds to another holding the bow as an attribute of Hera Eileithyia — the latter dating from about B. C. 500.

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To appreciate the historical relation which the Heraeum bore to the three great centres of early Greek history in the Argolid we must consider the topography of the temple precinct (Figs. 1–4).[8]

Pausanias[9] tells us that the Heraeum is fifteen stadia from Mycenae. Strabo,[10] on the other hand, says that the Heraeum was forty stadia from Argos and ten from Mycenae. Both authors underestimate the distance from Mycenae, which is about twenty-five stadia, or a little more than three miles; while the distance from Argos is forty-five stadia, or a little more than five miles. The distance from the Heraeum to the site of the ancient Midea is slightly greater than to Mycenae, while that from the Heraeum to Tiryns is about six miles, i. e. slightly greater than to Argos.

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FIG. 5. — VIEW OF MOUNT EUBOEA, WITH SOUTH STOA IN THE FOREGROUND.
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[1] The land belonging to the sanctuary, the glebe land, must have extended far beyond the *τέμενος* itself, as is already suggested by the fact that from the sacred herds probably one hundred head were sacrificed at the festival alone. In the passages quoted below from Statius, the poet is clearly speaking of large and wide tracts and subdivisions of points on the whole Argive plain: Larisa, Lerna, Prosymna, Midea, — and thus evidently implies a large tract of grazing land under Prosymna. So too in the passage quoted from Stephanus Byz., his definition of *προσυμναῖος* as *ὁ οἰκήτωρ*, shows that a habitable district is meant. Cf. the curious epithet *προσόμνη* of Demeter at Lerna. Paus. II. 37. 1.

[2] *Theb.* i. 383; iii. 325; iv. 44.

[3] VIII. 6. 11. 373.

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[1] The land belonging to the sanctuary, the glebe land, must have extended far beyond the *τέμενος* itself, as is already suggested by the fact that from the sacred herds probably one hundred head were sacrificed at the festival alone. In the passages quoted below from Statius, the poet is clearly speaking of large and wide tracts and subdivisions of points on the whole Argive plain: Larisa, Lerna, Prosymna, Midea, — and thus evidently implies a large tract of grazing land under Prosymna. So too in the passage quoted from Stephanus Byz., his definition of *προσυμναῖος* as *ὁ οἰκήτωρ*, shows that a habitable district is meant. Cf. the curious epithet *προσύμνη* of Demeter at Lerna. Paus. II. 37. 1.

[2] *Theb.* i. 383; iii. 325; iv. 44.

[3] VIII. 6. 11. 373.

(Πρόσυμνα, μοῖρα τοῦ Ἄργους)[1] might lead one to believe that it bordered to the south on the territory of Midea, and to the west on the territory of the city of Argos. It would thus perhaps have included the site of such modern villages as Chónica, Anyphí, and Pasiá. But it is uncertain whether we have any right to include the passage from Strabo as applying to the Prosymna of our Heraeum. The passage in Strabo, as it now stands, tells us that Prosymna was near Midea, and also contained a temple of Hera.[2] And though the coins of Midea have on the reverse a head of Hera Argeia,[3] and that place possibly may have had a small Hera temple of its own, it would be a curious coincidence if it also had a district bordering on the Heraeum to which the same name was given as to that of the adjoining Heraeum territory; still, the Greek of the passage in Strabo, which, moreover, mentions the ἱερόν (and he has been speaking of the Heraeum but a page before this) without the article, points to a separate temple and a separate Prosymna. In the time of Stephanus, we must remember (see above) that the term Argos might well have been used to include the great sanctuary of that city, namely, the Heraeum.

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Fig. 6. — Site of Heraeum from the East.
The East Revma in the immediate foreground; beyond it the three terraces: the Old Temple, the Second Temple, and the South Stoa.

flowing above the Heraeum falls into a gully and disappears." Early travelers and topographers like Mure,[4] whose whole scale of identification was smaller, saw the Asterion in the Glykia stream which descends from the mountain behind the Heraeum, and loses itself in the gully or Revma to the southeast of the temple rock; while the Eleutherion would be the present Revma-tou-Kastrou bordering the rock on the northeast. This view was held also by us when we began our work at the Heraeum.[5] But Captain Steffen's[6] convincing arguments in favor of his new identification of this river have

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Fig. 7. — Site of the Heraeum from the Southwest.
The Revma-tou-Kastrou in immediate foreground; beyond, the succession of terraces. The corner of the Southwest Stoa shows in the foreground; above it, in the middle, the West Building.

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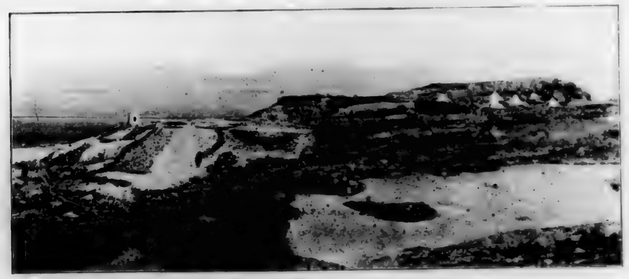


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Indeed, I believe that the extensive early-Greek Southwest Stoa (the largest building on the site), the Roman house on the west, and the bath and well-house on the west side of the North Stoa, and perhaps also the West Building, were in more or less direct connection with these water-works, the ceremonies to which they ministered, and the character of quasi health-resort which the sanctuary must have had.

Cisterns are scattered about the sanctuary, all, however, in the direction of the bed of the stream. With the exception of the more open cistern marked A, to the west of the Old Temple, they are cave-like, or in the forms of rock-cut tombs.[1] Among these the cross-shaped one, mentioned by earlier travelers, below the West Building (VII) and the northeast end of the Lower Stoa (X), is closest to the actual temple buildings. Immediately beside this is the semicircular basin cut into the rock[2] in which a strigil was found, and which was probably a bath adjoining the cistern. Another rock-cut cistern running far into the hillside is below the northwest slope of the Heraeum hill towards the bed of the stream, and seems to have been fed by the overflow from the river. For although, as is the case even with the Inachus and most rivers of Greece, the bed of the stream is generally dry, after rains the stream swells to a very torrent and overflows its banks.[3] Still more clearly do we realize this intimate connection of the temple with the stream when we consider the underground cisterns, bath-like chambers cut into the rock, and rock-cut aqueducts, on the river bank about two hundred yards to the southwest of the temple, at which Mr. Brownson[4] and Mr. Fox excavated with untiring energy. Here, also, we find a subterranean conduit (Fig. 8) cut into the solid rock, with three "avenues leading, one toward the plain and town of Argos, the second back toward the temple, the third at right angles to the direction of the other two, or about southeast." The second and third lead back into the bed of the river, and were thus evidently feeders for the main channel of the waters in the stream. The first runs back, however, at least 13.70 m. towards the temple, and was followed by Mr. Brownson and Mr. Fox with their gang of "miners" for 34.70 m. in the direction of Argos. This hard work was not carried farther. Mr. Brownson suggests that this might have been connected with a system of irrigation for the plain. There is another possibility to which we shall return presently. Meanwhile I must at once remark that this rock-cut watercourse reminds us of that discovered by Dörpfeld at Athens in connection with the identification of the Enneacrunus, and I shall have to point to other resemblances between the waters of Eleutherion and those of Enneacru-



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nus. Besides these water-works immediately connected with the stream, there was an elaborate well-house and bath with chambers on the southwest corner of the second platform, abutting on the North Stoa (II). Adjoining this well-house, which no doubt contained water for drinking and sacrificial purposes, we recognized a bath[1] in a flat, cemented square with a channel for the off-flow of water, found during the first year of our work. A channel of terra-cotta pipes ran from this well-house, between the north side of the Second Temple and the North Stoa towards the northeast end of the temple. It is probable that the sacred water was thus conducted to the east platform to be used in the sacrifices and ceremonies which took place before the temple.

Enough has been said to show how elaborate and important were these water-works within the temple precinct, and that they bear some immediate relation to the stream — these facts all being in favor of the identification of the latter with the Eleutherion mentioned by Pausanias. It is possible that the waters of the stream, stored in these cisterns, were fed also by some other watercourses belonging to its immediate system,[2] but the stream itself would be the centre and bear the name; and so this name could not be given to the Panagia well.

Mr. Frazer[3] strives to reconcile the two conflicting views by suggesting that possibly the waters from the Panagia well may have been conveyed in the rock-cut aqueduct to the temple. But even if the direction of our aqueducts did not contradict this, it would not solve the difficulty. For the name Eleutherion, if given to the water drunk at the Heraeum and led in the conduits by the stream-bed "which flows by the road," would have to apply not to this transported water but to the stream itself, or to the distant well.[4]

The puzzling question is further complicated by the passages in Eustathius[5] and Hesychius,[6] according to whom this water of freedom came from a well called Cynadra at Argos, of which the slaves drank on being freed. Not much weight need be given to the term Argos as used loosely by these late writers. Still, if their evidence stands, it seems to me worth suggesting that the rock-hewn aqueduct discovered by us leading in the direction of Argos may have taken the sacred water from the sanctuary to the market-place of Argos, and have been there used in the ceremony of freeing slaves.

The water of Eleutherion was thus used primarily by the priestesses for the immediate ceremonies of their own cult, and secondarily in the ceremony of freeing slaves. It is worth considering for a moment whether there may not be some inner connection between these two uses.

This old lustral ceremony of the temple of Argive Hera reappears in other cults. At the temple of Artemis Triclaria at Patrae it is connected with the offering which took the place of human sacrifice and with the beautiful story of Comaetho and Melanippus.[7] There it is the river Amilichus, "the stream," in the waters of which the children must

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Fig. 9. — Drum and Capital from Second Temple, as found behind the South Stoa.

This lustral use of the water in connection with marriage would precede its use as a part of the ceremony of emancipation, which already presupposes a thoroughly developed and complicated civic organization; but we can understand that the Eleutherion water, when used for nuptial ceremonies at Argos, might be used also in the emancipation of slaves, and that "drinking the water of freedom" might become a proverbial phrase for being freed. Strange as it may appear to us, the act of marriage to the ancient Greek, especially to the Greek maiden, kept in the strict seclusion of her παρθενών, the step which made her γαμετή or even a παλλακή, was one of comparative freedom and emancipation.[9]

While the balance in the weight of evidence thus appears to us to incline towards the identification of the Revma-tou-Kastrou with the ancient Eleutherion, the arguments in favor of the Panagia well appear to us still to be very strong, and we can therefore not speak with anything approaching to certainty on this point of topography.

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nus. Besides these water-works immediately connected with the stream, there was an elaborate well-house and bath with chambers on the southwest corner of the second platform, abutting on the North Stoa (H). Adjoining this well-house, which no doubt contained water for drinking and sacrificial purposes, we recognized a bath[1] in a flat, cemented square with a channel for the off-flow of water, found during the first year of our work. A channel of terra-cotta pipes ran from this well-house, between the north side of the Second Temple and the North Stoa towards the northeast end of the temple. It is probable that the sacred water was thus conducted to the east platform to be used in the sacrifices and ceremonies which took place before the temple.

Enough has been said to show how elaborate and important were these water-works within the temple precinct, and that they bear some immediate relation to the stream — these facts all being in favor of the identification of the latter with the Eleutherion mentioned by Pausanias. It is possible that the waters of the stream, stored in these cisterns, were fed also by some other watercourses belonging to its immediate system,[2] but the stream itself would be the centre and bear the name; and so this name could not be given to the Panagia well.

Mr. Frazer[3] strives to reconcile the two conflicting views by suggesting that possibly the waters from the Panagia well may have been conveyed in the rock-cut aqueduct to the temple. But even if the direction of our aqueducts did not contradict this, it would not solve the difficulty. For the name Eleutherion, if given to the water drunk at the Heraeum and led in the conduits by the stream-bed "which flows by the road," would have to apply not to this transported water but to the stream itself, or to the distant well.[4]

The puzzling question is further complicated by the passages in Eustathius[5] and Hesychius,[6] according to whom this water of freedom came from a well called Cynadra at Argos, of which the slaves drank on being freed. Not much weight need be given to the term Argos as used loosely by these late writers. Still, if their evidence stands, it seems to me worth suggesting that the rock-hewn aqueduct discovered by us leading in the direction of Argos may have taken the sacred water from the sanctuary to the market-place of Argos, and have been there used in the ceremony of freeing slaves.

The water of Eleutherion was thus used primarily by the priestesses for the immediate ceremonies of their own cult, and secondarily in the ceremony of freeing slaves. It is worth considering for a moment whether there may not be some inner connection between these two uses.

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Pausanias, having fixed the general topography of the Heraeum, proceeds to describe the site, and what he considered the objects of chief interest there. He begins with the temple which he saw before him in perfect condition in his own day, and tells us that "they say that the architect of the temple was Eupolemus, an Argive." This Argive architect is otherwise unknown to us. The foundations of this temple (the Second Temple), which was built immediately after the burning of the Old Temple in 423 B. C., were laid completely bare by us after previous excavators had made shallow cuttings at the east, north, and south sides. A sufficient number of architectural details (cf. Fig. 9) were discovered to enable Mr. Tilton to draw not only ground-plans, but also elevations of this important and beautiful building.[1] The temple, as far as the south, southwest, and southeast sides are concerned, was constructed on elaborate foundations of limestone, rising, at the southwest corner, to a height of about three metres. The rock on which the temple stood was cut and leveled, especially on the north side and in the interior, while the remaining inequalities of the rocky summit of this "platform" were removed by elaborate filling up with dry rubbish, similar to the procedure on the Acropolis of Athens in Cimonian times. Before the Second Temple was built, this rocky platform must have been used from the earliest times.[2]

Pausanias then describes, in the following terms, the sculptures which decorated the temple:[3] "The sculptures over the columns represent, some the birth of Zeus and the battle of gods and giants, others the Trojan war and the taking of Ilium." These sculptures, of which many interesting fragments have been found, will be dealt with at length in the special chapter on Sculpture. But we may say here that the expression *ὑπὲρ τοὺς κίονας* refers not only to the metopes, of which there were sixty-two in the temple, but also to the pediments, from the sculptures of which undoubted fragments have been discovered by us. We hope to prove, also, that the sculptured decorations of the temple illustrate Polycleitan art at its best.

Having described the outside of the temple, and standing at its east end, or entrance, Pausanias continues: "Before the entrance stand statues of women who have been priestesses of Hera, and statues of heroes," etc.[4] Some of the bases for such statues have been found in our excavations to the northeast of the Second Temple (see Figures 2 and 10). It is important to note that there are no traces of such statues at the west side of the temple, where, moreover, the nature of the space would not have admitted of their erection. This fact alone would contradict the assumption that

[1] See chapter on Architecture (pp. 117 ff.).

[2] One or more large altars doubtless stood on the site later occupied by the Second Temple. Some vestiges of these altars may remain in the rough masonry within the foundations of the temple, while the so-called black layers of soil, to which reference will be made below, though almost continuous round and below the foundations of the temple from east to west on the south side, were thicker and richer in finds at certain points or "pockets," and must, as at Olympia, have marked the locality of an ancient altar. The slight remains of the rudest form of early walls, to my mind antedating the Cyclopean wall of the upper terrace, to be seen on the bed-rock on the southernmost slope and to the west of this temple platform, also confirm the earlier use to which this part of the Heraeum precinct was put before the building of the Second Temple.

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himself into this bird, and that Hera caught the bird to play with it. . . . It is said that beside the image of Hera once stood an image of Hebe, also of ivory and gold, a work of Naucydes."

The exact position for the base of this statue of Hera is shown in Mr. Tilton's plans (cf. PLATE XVI.). We are helped in forming some conception of the general composition of this great statue by extant Argive coins;[1] though we must remember the evident truth that small coins of a later period (these belong to imperial Rome) can hardly convey any adequate idea of the artistic spirit or finish of such colossal statues by a master-hand. However, these coins show us the seated Hera on her throne, and even represent the pomegranate in her right hand, and the sceptre upheld by her left hand (Fig. 11). We naturally come much closer to the artistic spirit of the statue in such coins as do not attempt to render the whole figure and throne, but merely give the head. One of these Argive coins,[2] in particular, has been recognized by all authorities as being directly inspired by the gold and ivory statue of Polycleitus (Fig. 12). Furtwängler[3] goes so far as to consider it a direct copy of the statue. If this be so (and I am inclined to agree with him) we must always allow, especially in the rendering of details and ornaments, for the necessary modifications to be made in reducing a head and neck from at least four to five feet in height to a flat relief half an inch in diameter. We are, then, not surprised that the elaborate decoration of the *στεφάνη* with Graces and Seasons, should be reduced to a decoration of flowers and honeysuckle scrolls. To realize how this reduction in ornament occurs, we need only compare with one another the several coins of this series,[4] which present this same type in varying degrees of artistic accuracy and excellence, to find how the *στεφάνη* becomes smaller and less significant, and reduces its ornament. But in view of the evidence furnished by the coin as to the ornamentation of the *στεφάνη* on the gold and ivory statue, it may perhaps be advisable to compare a passage in Tertullian[5] with the description of Pausanias. If Tertullian is referring to the Polycleitan Hera, he implies in his vine-wreath a plant-ornamentation about the head. The band part of the crown possibly — or even probably — was decorated with such a scroll pattern; while the Graces and Seasons (omitted from this coin) were fashioned in the round or in high relief, and projected as points to this crown. The coins which give the whole figure show such points.



FIG. 11 *a*, *b*. — TWO COINS OF ARGOS. THE HERA OF POLYCLEITUS.

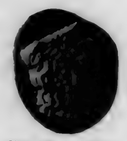


FIG. 12. — COIN OF ARGOS. THE HEAD OF POLYCLEITUS'S HERA.

The importance of this fact and its bearing upon the results of our excavations will

[1] See Imhoof-Blumer and Gardner, *Numismatic Commentary on Pausanias*, p. 34, pl. i. 12, 13, 14, 15; Gardner, *Types of Greek Coins*, p. 137, and pl. viii. 13; Overbeck, *Kunstmythologie*, III. p. 41, and Münztafel ii. and iii.; Head, *Historia Nummorum*, p. 367; Frazer, *Pausanias*, III. p. 184, fig. 29; Hitzig-Blümner, *op. cit.* i. 2, pl. xvi. No. 18.

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[3] *Meisterwerke*, p. 413.

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[5] *De Cor. Mil.* 7. Böttticher, *Kunstmyth.* II. 288, and Brunn, *Gesch. der Griech. Künstler*, I. p. 213, refer this passage to the Polycleitan Hera, though others doubt. Cf. Hitzig-Blümner, *op. cit.* I. 2, p. 566: these same scholars (p. 567) quote several authorities in support of their view that the anthemia (*Palmetten*) ornament is intimately related to Graces and Seasons: "In der symbolischen Bedeutung stimmen freilich beide überein; denn wie die Chariten und Horen Blühen und Anmuth bedeuten, so geht auch das Anthemien-Ornament auf vegetabilischen Segen."

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himself into this bird, and that Hera caught the bird to play with it. . . . It is said that beside the image of Hera once stood an image of Hebe, also of ivory and gold, a work of Naucydes."

The exact position for the base of this statue of Hera is shown in Mr. Tilton's plans (cf. PLATE XVI.). We are helped in forming some conception of the general composition of this great statue by extant Argive coins;[1] though we must remember the evident truth that small coins of a later period (these belong to imperial Rome) can hardly convey any adequate idea of the artistic spirit or finish of such colossal statues by a master-hand. However, these coins show us the seated Hera on her throne, and even represent the pomegranate in her right hand, and the sceptre upheld by her left hand (Fig. 11). We naturally come much closer to the artistic spirit of the statue in such coins as do not attempt to render the whole figure and throne, but merely give the head. One of these Argive coins,[2] in particular, has been recognized by all authorities as being directly inspired by the gold and ivory statue of Polycleitus (Fig. 12). Furtwängler[3] goes so far as to consider it a direct copy of the statue. If this be so (and I am inclined to agree with him) we must always allow, especially in the rendering of details and ornaments, for the necessary modifications to be made in reducing a head and neck from at least four to five feet in height to a flat relief half an inch in diameter. We are, then, not surprised that the elaborate decoration of the *στεφάνη* with Graces and Seasons, should be reduced to a decoration of flowers and honeysuckle scrolls. To realize how this reduction in ornament occurs, we need only compare with one another the several coins of this series,[4] which present this same type in varying degrees of artistic accuracy and excellence, to find how the *στεφάνη* becomes smaller and less significant, and reduces its ornament. But in view of the evidence furnished by the coin as to the ornamentation of the *στεφάνη* on the gold and ivory statue, it may perhaps be advisable to compare a passage in Tertullian[5] with the description of Pausanias. If Tertullian is referring to the Polycleitan Hera, he implies in his vine-wreath a plant-ornamentation about the head. The band part of the crown possibly — or even probably — was decorated with such a scroll pattern; while the Graces and Seasons (omitted from this coin) were fashioned in the round or in high relief, and projected as points to this crown. The coins which give the whole figure show such points.



FIG. 11 *a*, *b*. — TWO COINS OF ARGOS. THE HERA OF POLYCLEITUS.



FIG. 12. — COIN OF ARGOS. THE HEAD OF POLYCLEITUS'S HERA.

The importance of this fact and its bearing upon the results of our excavations will

[1] See Imhoof-Blumer and Gardner, *Numismatic Commentary on Pausanias*, p. 34, pl. i. 12, 13, 14, 15; Gardner, *Types of Greek Coins*, p. 137, and pl. viii. 13; Overbeck, *Kunstmythologie*, III. p. 41, and Münztafel ii. and iii.; Head, *Historia Nummorum*, p. 367; Frazer, *Pausanias*, III. p. 184, fig. 29; Hitzig-Blümner, *op. cit.* i. 2, pl. xvi. No. 18.

[2] Imhoof-Blumer and Gardner, *op. cit.* pl. i. 14; Overbeck, *op. cit.* Münztafel ii. 6; Hitzig-Blümner, *op. cit.* pl. xvi. 19.

[3] *Meisterwerke*, p. 413.

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of the Roman imperial times.[1] The passage relating to it in Pausanias is very obscure. Mr. Frazer translates it: "It is said that beside the image of Hera once stood an image of Hebe, also of ivory and gold, a work of Naucydes." In view of the date and evidence of the above-mentioned coins, it has been remarked that the expression of doubt (λέγεται) refers to the authorship of Naucydes and not to the existence of the statue. I might add that if it does not refer to the existence of the statue, it might apply to the identification of the statue as Hebe — nay, to identification and artist together. Thus either Pausanias did not see the statue (which appears to conform to the usual reading of the Greek); or he refers doubtfully to its being a work of Naucydes; or he doubts whether it is a statue of Hebe; or, finally, he doubts whether the statue beside Hera is the Naucydean Hebe. This Naucydes is recognized as the son of Patrocles,[2] nephew and probably pupil of the great Polycleitus. His brothers, also well-known sculptors, were Daedalus and the younger Polycleitus. He may in his youth have been an assistant, besides being the pupil of Polycleitus, and hence, as is the case with the pupils and assistants of Phidias, the ascription to him of part of the gold and ivory statues in the Heraeum may have been open to doubt.

The mind of Pausanias is evidently still in the temple when he proceeds to describe more archaic images of Hera such as the one he mentions as being on a pillar. This statue must not be confused with the earliest symbolical pillar representing Hera mentioned by Clement of Alexandria.[3] Of this earliest symbolical pillar we shall have more to say when we deal with the sculpture; for it is highly probable that we have discovered a portion of it in our excavations (see Fig. 15). The pillar may not have stood within the second temple. The most ancient image seen by Pausanias in the temple was "made of the wood of the wild pear-tree: it was dedicated in Tiryns by Pirasus, son of Argus, and when the Argives destroyed Tiryns they brought the image to the Heraeum: I saw it myself." The early terra-cottas, which we have found in great numbers during our excavations, will perhaps throw some light on the nature of the earliest image seen by Pausanias; and in the chapter on terra-cottas we shall again refer to this wooden image.

Pausanias then notes "some other remarkable dedicatory offerings" in the temple, such as an altar of silver with reliefs representing the marriage of Hebe and Heracles, and a golden peacock adorned with "shining stones," dedicated by the Emperor Hadrian. A peacock, this bird being sacred to Hera, is figured on the Argive coin with Hera and Hebe referred to above. General Gordon (see p. 65), in his account of his excavations at the Heraeum, mentions a part of a marble peacock which he excavated there. I no longer believe that the bronze bird we found at the end of our first year, and which I described as a peacock,[4] is really a peacock. Pausanias further mentions "a golden crown and purple robe, offerings of Nero," among the votive offerings in the temple.

The Periegete then leaves the interior of the temple and, unfortunately for us, breaks off his description of the site upon which were at least nine buildings besides the second temple. But we must be grateful that at least he did refer to "the foundations of the

[1] Imhoof-Blumer and Gardner, *op. cit.* pl. i. 15; Hitzig-Blümner, *op. cit.* I. p. 567, where especial stress is laid upon the unusual position of τείχη Ναυκύδους.

[2] See Murray, *Hist. of Gr. Sc.* II. p. 234; Collignon, *Hist. de Sculp. grecque;* E. Gardner, *Gr. Sculpt.* II. p. 338; Furtwängler, *Masterpieces*, p. 225; see also Frazer's note on Pausan. VI. 1. 3. The passages which refer to the work of this eminent artist are in Overbeck, *Schriftquellen*, etc. No. 995 to 1001, as well as Nos. 983, 932, 547. For the inscription on the extant base of the Olympian victor Eucles, see *Die Inschriften v. Olympia*, No. 159; Löwy, *Inschr. Gr. Bildh.* No. 86; and Frazer, *l. c.*

[3] *Strom.* I. 24. 151, from the *Phoronis*.

[4] *Excavations, etc.* p. 5.

former temple above this [second] temple, together with the few other remains of it which escaped the flames." For it was the extant Cyclopean supporting wall above the Second Temple platform which put the identification of this site beyond a doubt, especially when in our excavations we found the layers of charred wood and other remains, clearly bearing out the account of its burning. With the record of the accident caused by the carelessness of the priestess Chryseis, the chapter ends, and Pausanias dismisses the Heraeum. We shall often refer to the Old Temple, and its remains will be described by Mr. Tilton in the chapter on Architecture. He will there also treat of the numerous other buildings of which Pausanias makes no mention.

THE EARLY HISTORY OF THE HERAEUM

We have seen that geographically and topographically the Heraeum bears the closest relation to the plain defined on the south and east by Tiryns and Midea, while it is less closely connected with Mycenae and the city of Argos. The original establishment of the earliest temple of Hera on the site which it occupies would thus come from Tiryns and Midea, neither from Mycenae nor from the city of Argos.[1] This conclusion is borne out by all the results of our excavation, the evidence of the architectural remains on the site, as well as of all the individual finds there made, and also by the traditions of the earliest history of the Argive Plain. In fact, a careful consideration of all the material before us forces us to this conclusion.[2]

The chronology which I venture to give in the following pages does not aim at being absolute, but only comparative. I follow the genealogical system of Pausanias, believing

[1] As will be evident from passages below, there are traces of a pre-Tirynthian occupation of the Heraeum site. I have in the first instance been mainly concerned with showing that the Heraeum is pre-Mycenaean and bears an earlier relation to Tiryns. I was unwilling at the time to complicate the presentation of this view by the introduction of further hypotheses. But there can hardly be any doubt that there was a pre-Tirynthian period of the Heraeum — in fact, it looks as if this was the citadel of the earliest community in the Argive country. I have since this was written published my views on this subject in an article on 'The Earliest Hellenic Art and Civilization, and the Argive Heraeum,' *American Journal of Archaeology*, vol. IV. (1900), pp. 40 ff. Compare also an article in the *North American Review*, vol. CLXXII. No. 532 (1901), pp. 431 ff., on 'Recent Discoveries in Greece and the Mycenaean Age,' as well as the *Classical Review*, Dec., 1900, pp. 473 ff., on 'The Argive Heraeum and Bacchylides (xi. 43–84).'

[2] It would incumber this exposition too much were I to attempt to give the various views of all the authorities who have written on the Mycenaean and Pre-Mycenaean age. I must remain content with naming a few of the chief works to which I have referred and which the reader will find most useful. Perrot and Chipiez' *L'Art dans l'Antiquité* contains a masterly synthesis of all the material. Mr. Tsountas's articles in the *Ephemeris* have been summarized in his own book, which has been translated and reëdited in Tsountas and Manatt's *The Mycenaean Age*. Schuchhardt's *Schliemann's Ausgrabungen* has passed through two editions and has been translated into English by Mrs. Eugénie Sellers-Strong. This book gives a good summary of Schliemann's own monographs on Troja, Mycenae, and Tiryns. To these must be added Dörpfeld's more recent articles in the *Athen. Mitth.* vols. III. 1878), pp. 1 ff., and VIII (1882), pp. 241 ff.; Helbig, *Das Homerische Epos;* Milchhoefer, *Die Anfänge der Kunst.* More recent works of importance have been contributed by Dümmler, *Athen. Mitth.* XI. (1886), pp. 1 ff., 44 ff.; XII. (1887), pp. 1 ff.; XIII. (1888), pp. 273 ff.; Percy Gardner, *New Chapters in Greek History;* Frazer's *Pausanias*, vol. III. pp. 98 ff., containing an excellent critical summary of Mycenaean Antiquities; Reisch, *Die Mykenische Frage.* Professor Ridgeway has raised a most important issue in his article, 'What People produced the Objects called Mycenaean?' (*Journal of Hellenic Stud.* XVI. [1896], pp. 79 ff.), and has long been engaged on a comprehensive work dealing with this question, entitled the *Early Age of Greece*, of which the first volume has recently been published. I can say with confidence that his studies must command most serious attention. In my own conclusions here given I have endeavored conscientiously to put from my mind all wider problems based upon a wider sphere of induction. The very first year of our excavation produced material which showed me that many accepted views would have to be reconsidered. Since then I have limited myself to allowing the actual facts revealed by our spades to speak for themselves, and have introduced other spheres of study and inference only as they affect the body of evidence which I can actually control. I venture to believe that our work will be the more useful in its bearing upon wider questions from being thus centralized. Individual references to other works will be made as the occasion arises.

him to have secured his accounts from the most trustworthy sources, — at the Heraeum and at Argos. I am well aware that a vast amount of wholly imaginative matter has been mingled with these myths, but I believe that a residuum of historical truth is not only contained in the stories but is attainable by us. I am not here concerned with any individual name or figure, not with Phoroneus, Proetus, etc.; but what I do feel is that the succession of Argive rulers, as handed down in the genealogy given by Pausanias, confirms the evidence we derive from other sources, — that there was a continuous "political" community in the Argive Plain long before the advent of the Atridae.

The first important evidence as to the age of the Heraeum is to be derived from the comparison of the walls of Mycenae with those of Tiryns. All authorities to my knowledge are agreed upon considering the circuit wall of Mycenae later than those of Tiryns and Midea. To quote the words of Schuchhardt:[1] "The walls of Tiryns give one the impression of being older than even the oldest part of the circuit wall of Mycenae. They consist of colossal blocks very little hewn and show no trace of having been restored at a later time. The circuit wall of Mycenae, on the other hand, was built originally of somewhat smaller stones, and has been subsequently strengthened and completed at various times with carefully executed ashlar and polygonal masonry."

Now the Cyclopean supporting wall of the older Heraeum corresponds to the oldest parts of the wall of Tiryns. The colossal unhewn blocks — some of which are as much as thirteen and eighteen feet long, larger than any I have seen at Tiryns — are piled up one upon the other, supported in places by smaller stones inserted between them, and tax our imagination to suggest the methods applied by the early peoples in moving them about. We can well understand how in the minds of the Greek people the legends concerning the Lycian Cyclopes should have been grouped round such structures. Now, as we shall see, according to tradition it was Proetus who brought these Lycian craftsmen to build the walls of Tiryns, and to the same hands are to be ascribed the foundation walls of the temple of the Heraeum. On the other hand, as we shall see, tradition placed the founding of Mycenae two generations later than Proetus, — ascribing it to Perseus.

The remains which our excavations have laid bare confirm the earlier date of Tiryns in a striking manner. The upper platform upon which the Old Temple stood, facing to the east, with the broad flattened space in front, overlooked the plain towards Tiryns and Midea. Access to this front was gained either over the lower hills to the east, from the northeast, or from the southeast, where the present path from Chonica leads up to the temple. The entrance to the older sanctuary at this southeast corner passed over the elevation upon which the Second Temple was subsequently built, either at the east or more probably at the west end; and it is here, on the slope of the Second Temple, that we found, below the remains of the steps that in later times of Argive supremacy were built for the Second Temple, a large number of very early objects, especially primitive terra-cottas.

The buildings below the original temple platform veer round more and more, as it were, towards the west. Here they extend down towards the stream, not only because of the Eleutherion rites, to which reference has been made above, but, as is clearly the case in building VIII, which distinctly reminds one of a propylaeum, because we here approach the road leading from Mycenae. It is, moreover, on this site, about two hundred yards along the road to Mycenae, that we discovered three beehive-shaped tombs, with "Mycenaean" objects that are certainly connected with the Heraeum. Thus in this second period of

[1] *Schliemann's Ausgrabungen*. 2d ed., p. 119.

the architectural history of the Heraeum, as manifested by the remains before us, there is an inclination towards, an attraction to, Mycenae; and while the East Building (IV) and many of the buildings at the extreme eastern angle of the Second Temple platform still point to a living relation with Tiryns, the three large Western Buildings (VII, VIII, and X) distinctly show the growing preponderance of Mycenae. This is the Mycenaean Period. But at the risk of appearing fanciful and exaggerating the import of the mere position of such buildings, we would point out that the West Building (VII) and the Lower Stoa (X), while placed at the west or Mycenae end, show a tendency towards the south or Argos side, as they undoubtedly belong to a period in which the power of Argos asserted itself more and more.

When, however, the second platform was cleared and filled in to the level and the temple of Eupolemus was built, about B. C. 420, the edifices of this period, the temple itself (V), the chambers and buildings at the northeast of the second terrace (II), and the South Stoa (VI), with the elaborate terrace and steps below it, and the others to the east of it, all change their common orientation, and the splendid entrance to this temple, on the south slope, distinctly faces the city of Argos, which now reigns supreme over the land and has complete charge and patronage over the Heraeum. In the topographical history of the sacred precinct itself, the location of the buildings thus indicates three main periods, — the Tirynthian, the Mycenaean, and that of the city of Argos.

The point which concerns us most at present is the origin of the early temple, which leads us back to Tiryns and to Proetus.

But the site which we have excavated has yielded monumental evidence pointing to an earlier date for the occupation of this site by a temple of Hera than the erection of the Cyclopean walls. Objects which show the existence of inhabitants possessing distinct forms of civilized life have been found below these Cyclopean walls. We have also come upon a system of ruder and smaller walls, which point to a period anterior to the building of the Cyclopean foundation wall; for the walls in question, built of rude unhewn small stones, which probably formed the foundation for superadded walls of sun-dried brick or mud, correspond to the walls found by Schliemann at Hissarlik in his First and Second City. Now if the palace in the Second City of Hissarlik corresponds to the Tirynthian Palace of Proetus,[1] then the structures corresponding to the earlier Hissarlik settlements must be earlier in date than the foundation walls built for Proetus at Tiryns or the Heraeum. I am here referring to the slight remains of walls immediately below the Cyclopean foundation wall on the rise above and to the east of Stoa II as well as to a series of such primitive walls found by us in excavating down to the bed-rock behind the South Stoa and between the West Building and the Second Temple. These rude walls from their primitive construction were readily destroyed, and we must consider ourselves fortunate in having found so many clear traces of them. The mass of these below the Cyclopean foundation wall were mentioned by me in my Annual Report for 1892–93.[2] Since within these we found the most primitive form of cooking-pot,

[1] This Second City was formerly, with great assurance, — evidently unwarranted scientifically in view of the complete reversal of the last opinions expressed by Dörpfeld, — identified with the Homeric city. We now hear that it is the sixth city which can "with certainty" be identified with the Homeric Troy. If this be the case, then *a fortiori* must the palaces of Tiryns and perhaps Mycenae, which correspond to the second city of Hissarlik, be older. To use Dörpfeld's own words: "The second stratum must be older than this stratum with the Mycenaean vases [Sixth City] — how much older it is impossible to say, but the interval cannot have been a short one, as between the two lie two other strata of poor settlements." Cf. Tsountas-Manatt, *op. cit.* p. 368.

[2] *Twelfth Annual Report* of the American School at Athens, pp. 30, 31.

I then surmised that they might have been dwelling-houses for the priestesses of the early temple. This may be so; but they at all events appear to me now to antedate the supporting wall of the Proetean temple. The rude lower walls of this class run with fair continuity from east to west on the lower southern slope of the Second Temple platform behind the South Stoa; but what remains of them now on the west side of the slope abutting on the supporting wall which separates the West Building from the Second Temple platform presents an unintelligible line, and certainly one which has no relation to the later structures of the West Building or of the Second Temple platform.[1] Outside of these walls were found the small "Salaminian" shaft-tombs (Fig. 13), and these tombs were evidently put there after the walls had been erected. It appears to me that these walls mark the peribolos of the earliest sanctuary when the Second Temple was not thought of, when the site upon which it was erected was uneven ground containing merely an altar, and that the Cyclopean foundations were not yet built in the time of Proetus. Mr. Tilton, moreover, succeeded in discovering some plan in the present indications.

At all events, it is highly probable that before the erection of the temple to which the Cyclopean supporting wall and polygonal platform belong (which would hardly have been built on this site unless for a long time before it had been associated with the cult of the goddess), there was some form of sanctuary on this spot.[2]

All these considerations lead us back to times long anterior to the date hitherto assigned to the beginnings of Greek civilization; that is, earlier than the Mycenaean period, generally grouped round the fifteenth century B. C. We must, moreover, always bear in mind that the Argive Heraeum is distinguished from Hissarlik-Troy, in that it is not only a site in the heart of Greece proper, but is in a district associated with the earliest records and traditions of the Hellenic people, nay, it was the spiritual centre of the earliest Hellenes of whom we have knowledge. The remains of the temple belonging to the Cyclopean wall, which we are justified in associating with Proetus of Tiryns, thus form a central point for the dating of the earliest period, with evidence of preceding and succeeding occupation. Now the method of dating Greek temples by means of their orientation, as applied by Dr. F. C. Penrose,[3] has provided us with definite dates for these buildings; and I have heard from the most competent astronomical authorities that, as regards the astronomical side, his computations rest on a sound scientific basis. In the case of our Heraeum such inference is much strengthened in that we have two temples, one above the other, the date of the later one absolutely fixed in historical times, and that these two temples show some divergence in the line of their orientation. Dr. Penrose has concluded that the earlier Heraeum is one of the two oldest temples in the ancient Greek world, the other being the earliest temple of Athena on the Acropolis of Athens, and he assigns to these two temples the date of B. C. 1830. I here give Dr. Penrose's letter on this subject: —

[1] Since I wrote this I have conferred with Mr. Tilton, our architect, who, working independently on the architectural remains, has come to the same conclusion as to the early date to be assigned to these walls. He has succeeded further in discovering indications in the vestiges of these walls at the west end which point to what was probably a tower marking the entrance to the second terrace here. This will be made clearer in the introduction to the section on Architecture (pp. 108 ff.).

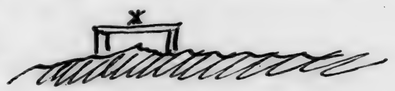
[2] See my articles cited in note 1 on p. 25.

[3] 'On the Orientation of Greek Temples and the Dates of their Foundation derived from Astronomical Considerations, being a Supplement to a Paper published in the Transactions of the Royal Society in 1893,' by F. C. Penrose, F. R. S., in *Philosophical Transactions of the Royal Society for* 1897, London, 1898, vol. 190 (A), p. 43.

"In answer to your questions, the most ancient temples as derived from the orientation are (that is, according to the arbitrary constants I have used in the calculation, which, however, admit of certain allowances which I will refer to afterwards): —

	B. C.
The Archaic Temple on the Acropolis }	
The Heraeum of Argos }	1830
3. The Athena Temple at Tegea	1580
4. The Heraeum at Olympia	1445
5. The Asclepieum at Epidaurus	1370
6. The Olympieum at Athens; i. e. Deucalion's foundations .	1000

The later Argive Heraeum is not connected in its orientation with the same star as the Old Temple. The arbitrary constants, as I have called them — and especially one of them, namely, the depression of the sun below the horizon when the star could be recognized, is a subjective matter which would allow of a little variation. In my scheme I do not allow of any capricious variation of this constant — and by so doing I hold that I get a tolerably rigid expression for the relative dates of the foundations; but there would be no great disturbance of the principle if we allow a little more depression of the sun than would be absolutely necessary for a clear visioned observer to sight the star in average fine weather.



"By allowing an additional degree of solar depression in the case of your Heraeum before the star's appearance was to be announced, the 1830 would become 1910. This arrangement would be very easily managed in practice, for instance, by allowing it to rise to the height of some mark [see cut] before it was said to be heliacal."

This, then, — B. C. 1910–1830, — is the date which we adopt for the Proetean Heraeum, and we have indications at the Heraeum of long-continued habitation before this date. We are thus driven back to dates much earlier than those hitherto assumed for the beginnings of Hellenic civilization. The only fixed date connected with the Argive region which we find is that assigned, according to Acusilaus, to Phoroneus, i. e. 1020 years before the first Olympiad, which brings us close to the year B. C. 1800. For the present it is enough to say that this computation of Acusilaus seems to have been made on some good grounds; but I should be inclined to place the period marked by Phoroneus much earlier.

But evidently it is necessary to weigh critically the ancient genealogies of the Argive rulers handed down by tradition, preserved to us in greatest completeness by Pausanias; and our main contention, of the existence of a Pre-Mycenaean period of Greek civilization, towards which all our evidence converges, will be strongly supported by such critical study. It will be finally confirmed, I believe, by the objects of earliest art and craft which we have had the good fortune to discover on this site.

In taking serious account of the local traditions of earliest Greek history handed down in ancient literature, and in weighing and sifting them critically, we must feel a general misgiving as to whether we are justified in attaching any weight to them for the purposes of historical research. This doubt is caused by the intrusion of so many myths and legends grouped round certain individual names which in themselves form a rational and simple genealogical table. But these misgivings will be greatly allayed when we consider the parallel instances within our well-authenticated historical ken to some of which my friend Professor Ridgeway has drawn my attention. It will then be seen that, by what might almost be called a mythogenetic law, popular legends have an

inherent tendency to group round the most famous and historical figures. There can, for instance, be no doubt that Charlemagne and Arthur and Vergil and Alexander the Great are historical figures, with a continuous roll of sober historical records preceding their own lives and times and following upon them. And yet there is a rich mine of legend clustering about the name of Charlemagne, the Arthurian Court, about Alexander the Great and Vergil, and, I might add, the Greek philosopher Pythagoras. These legends were sometimes formed by slow growth centuries after the period in which the central hero lived. Nay, we can, in our own day, immediately about us, study and realize the process by which story and legend are formed and crystallized about one central figure, when we but notice or recall how striking incidents or deeds, clever or epigrammatic sayings, witty or comic remarks or actions, show a natural tendency to be fathered upon persons whom we have known ourselves, and who were remarkable for any one of the qualities or actions mentioned above. So the imaginative and wonder-loving mind of the people spins its web of legend round the solid core of some prominent personality in the actual tradition of its past; and if not round a person, then round a striking object or locality. As Belger has shown in discussing Mycenae,[1] this is especially the case with graves and sepulchral monuments. And he has shown this process in a comparatively recent instance in the case of the tomb of a certain Count Gleichen. We can furthermore hardly be charged with arguing in a circle if, in considering carefully and giving due weight to the earliest Argive chronologies as preserved in the traditions handed down especially by Pausanias, we lay stress upon the fact that the residuum of fact which we thus obtain is strengthened by all collateral evidence in extant literature and in the ancient monuments at our disposal, and is supported by all the results of our excavations at the Heraeum. When once we grasp and control the confused mass of literary traditions concerning this earliest period of Greek history, and carefully sift the crude statements, placing them side by side in an orderly manner, the logical sobriety, the salient figures, and their organic relation to one another become manifest and convincing.

As regards the earliest Argive genealogies, Pausanias is and will ever remain the chief and safest guide. His account in the sixteenth and eighteenth chapters of the second book was evidently derived from the best traditions extant in the localities themselves in his day — and this at a time when the printing-press had not yet destroyed the persistence and accuracy of individual as well as traditional memory. Moreover, the student of Pausanias must realize that this very sphere of antiquarian research was the one in which that author was most interested and showed considerable critical capacity. In this very (sixteenth) chapter we are struck by the critical selection he makes of what is on the face of it the soundest tradition, and then adds the popular variants. Take, for instance, the careful manner in which he renders the doubtful record ascribed to Acusilaus concerning an eponymous hero of Mycenae, — Mycenaeus as a son of a similarly fictitious Sparton — and then rejects it. "I cannot accept the account which they attribute to Acusilaus, that Mycenaeus was a son of Sparton, and Sparton a son of Phoroneus; for the Lacedaemonians themselves do not admit it. The Lacedaemonians certainly have in Amyclae a statue of a woman Sparta; but it would surprise them even to hear of Sparton, son of Phoroneus."

At first sight we must be somewhat confused by the two different accounts of the genealogy of Argive rulers, as given in the sixteenth and eighteenth chapters of Pausa-

[1] *Die Mykenische Lokalsage*, pp. 1 ff. Cf. also article "Heros," in Roscher's *Lexikon*, and Rhode's *Psyche*, pp. 164 ff.

nias. As there given they appear to be entirely disconnected, while dealing with the same region. But a more careful study will show that they supplement one another. We understand this best when we realize what Pausanias, the traveler and antiquarian in the time of the Antonines, really did to collect this information, and what sources of information he had at his disposal on the spot.

In his journey in the previous chapters Pausanias had come southwards from Sicyon, Titane, Phlius, and Nemea, to the northern opening of the Argive plain nearest to Mycenae, just as the modern railway traveler approaches this district. Of the great centres of early Greek civilization in this plain three were practically destroyed and deserted, namely, Mycenae, Midea, and Tiryns. The centres which he found flourishing were the city of Argos and the Heraeum. Of these two the city of Argos had not always possessed supreme and primary importance in the history of the plain, or, as we shall realize more and more, it had not gained its prominent position until a comparatively late period of this early history. The Heraeum, on the other hand, had retained its essential and intrinsic importance in an unbroken sequence from the earliest times to the year in which it was visited by Pausanias. This intrinsic importance, moreover, was knit up with the very function of keeping sacred and traditional records of the past, not only by means of the list of priestesses there deposited, which served as the chronological foundation for the reckoning of the people, but also the function of preserving with piety the honor of the great goddess and the memory of the heroized ancestors of the people who founded her worship and were always intimately associated with it. At the close of the fifteenth chapter, where he leaves the Corinthian and Sicyonian regions to enter the Argive plain proper, he makes some preliminary remarks referring to the worship of Hera in this plain, and about the first figure in the genealogical series of Argive rulers, Phoroneus. Entering the plain, the first point he arrives at naturally is Mycenae, of which he gives a comparatively meagre description in the next chapter, after which he proceeds to the Heraeum and then continues his journey to Argos. It is thus at least unlikely that he would have found in the deserted village of Mycenae living records of early history, or, if he had, that he would have remained content with those that he found there in view of the living traditions in the most competent hands among the priestesses of the thriving sanctuary which he at once visits. From the Heraeum he again joins the main road, where he sees and describes the tomb and shrine of Perseus, and then enters the city of Argos. Now it is in this chapter that he gives us the genealogy of the rulers of the city of Argos.

The genealogy which Pausanias gives in the sixteenth chapter he received at the Heraeum, while that of the eighteenth chapter he gathered in the city of Argos. We are not astonished, then, to find that the Argos tradition only begins with Megapenthes, the fourteenth link in the chain of Argive rulers preserved in the Heraeum tradition; while the Heraeum tradition leads us much farther back. The relative lateness, moreover, of the foundation of this Argos dynasty, as compared with the history of the whole Argive plain, is confirmed by all other evidence. To gain a comprehensive view of this chronology before entering into details, I will at once give the following table of the two traditions and their relation to one another: —

HERAEUM TRADITION		ARGOS TRADITION
B. C.	Phoroneus	
	Daughter of Phoroneus	
	Argus	
	Pirasus and Phorbas	
	Triopas	
	Iasus	Agenor
	Io	Crotopus
		Sthenelas
		Gelanor
	Danaus	
	Lynceus	
	Abas	
circ. 1830 B. C.	Acrisius and Proetus (Tiryns and Heraeum)	
	Danaë, Megapenthes (Argos)	Megapenthes
	Perseus (Mycenae)	Argus
	Four generations	Anaxagoras (Melampus and Bias)
	Agamemnon	Alector
		(Iphis, Capaneus)
		Sthenelus
		(Agamemnon) Cylarabes
		Orestes ("Master of Argos, for he dwelt near," and added the larger part of Arcadia to his domain, Sparta, etc.)
		Tisamenus
		(Dorians)
		Temenus and Cresphontes
		etc.

The first person we meet with in the genealogy of Pausanias, Phoroneus, is probably the native founder of the Argive people, or, more probably, the chieftain who raised the people out of their "unpolitical" state into one of comparative social order and unity. As Pausanias says:[1] "he brought mankind together for the first time, for hitherto they had lived scattered and solitary, and the place where they first assembled was named the city of Phoronicum." That he was native born is shown by the fact that he is called the son of the river Inachus. Now his act of civilization consisted, in the first place, in bringing the people together in a city, a place of union within and a place of strength towards the outside world. The same act of civilization is, as regards the Attic people, there ascribed to Theseus in his *Synoikismos*, an event perpetuated in the history of Attica by the Panathenaic Festival.[2] Similar memorials of this definite step in civilization may be found in other Greek centres.

Besides this act of political union, Phoroneus gave spiritual and social unity to the inhabitants by the establishment of the worship and the cult of Hera.[3] His grave was shown at Argos in later days, and he was there worshiped as a hero. Eusebius, quoting from Acusilaus,[4] estimates his date as having been 1020 years before the first Olympiad, which would bring us to about the year B. C. 1800. We must assign a much earlier date to him, on the ground of the genealogy of Pausanias, — about 2200 B. C.

[1] II. 15. 5.

[2] Cf. Waldstein, *Essays on the Art of Pheidias*, Note E, p. 255.

[3] Hyg. *Fab.* 143; Tatian, *Or. adv. Graecos*, 60; and 39, p. 148. Pausanias, *l. c.*, ascribes this to Inachus.

[4] *Praep. Ev.* X. 10.

In the case of Phoroneus, as well as of the subsequent Argive rulers mentioned above, the different ancient authors present variants as to the exact relationship which they held to one another. But I maintain emphatically that such variation, so far from proving the purely fictitious nature of these personalities, is evidence of their real existence in remote antiquity. It shows the vitality of ancient tradition, and illustrates the living manner in which it is handed on. For, if such stories and genealogies were the pure figment of some poetic or imaginative brain, they would then be more likely to show complete unanimity and logical consistency in the presentation of the individual lives as well as of the sequence in the genealogical series. The variation brings home to us and illustrates the actual process by means of which these traditions were kept alive and handed on in the different localities. And it is in this natural process, in the popular growth of tradition, that some deviation and confusion will arise as it is handed on in distinct localities. Thus we hear[1] that Phoroneus was the brother of Aegialeus, or Pegeus, and the husband of Peitho. And we have still greater confusion in that Peitho is made the mother of Aegialeus and Appia. The position held by Niobe is also confusing. In Apollodorus,[2] Phoroneus is the husband of the nymph Laodice, and thus the father of Apis and Niobe. Still another authority[3] makes him the father of Pelasgus, Iasus, and Agenor, and attributes to him the subdivision of the Argive district among his sons, which, we shall see in the account of Pausanias, takes place eleven generations later under Abas. The confusion which thus arises is no doubt attributable to the inaccuracy of various local traditions, increased by the poetic remoulding when once the rhapsodist and the artist puts his fashioning hand to the rough material of popular tradition. In the case of Phoroneus, we know that this was the case, and that there existed an epic poem called Phoronis.[4]

It is a significant fact that the inheritance seems to have passed on from Phoroneus to his grandson through the mother. According to Apollodorus (*l. c.*), the next ruler was the son of Phoroneus's daughter, by Zeus, here called Niobe. This second Argive ruler is called Argus, a name which naturally is common within these genealogies, and is found, also, at a later period, in the tradition of the city of Argos. He is mentioned by most of the authorities quoted above, as well as by Herodotus[5] and the Scholiast to Euripides.[6] He is readily confused with the other Argus Panoptes, the great grandson of this Argus, son of Agenor, whose story is so fancifully interwoven into the legend of Io.

According to the genealogy of Pausanias, Argus has two sons, Pirasus and Phorbas. Pirasus is interesting to us inasmuch as it is to him that the very ancient wooden image which Pausanias saw at the Heraeum[7] is ascribed. Phorbas, who becomes the father of the next ruler, Triopas, and the grandfather of Iasus and great-grandfather of Io, is confusingly merged into the whole Io group of stories, as his own name and the name Euboea all point (see above, p. 6) to legends grouping round the cow and the pasture-land of the Heraeum. But this distinctly lies beyond our province. It is enough to say that this name would lead us towards Rhodes, which archaeologically shows an interesting connection with the Argive district, as well as with Thessaly and Messene. These remarks apply also to Triopas, the son of Phorbas.

[1] *Schol.* Eurip. *Or.* 632.

[2] Apollod. II. 1. 1.

[3] Hellanicus *ap.* Eustath. p. 385, 38.

[4] *Schol.* Apoll. Rhod. i. 1129; Clem. Alex. *Strom.* I. 25, p. 380. Cf. Kinkel, *Epic. Graec. Fragg.* pp. 209–212.

[5] Herod. VI. 8.

[6] Eur. *Phoen.* 1116.

[7] Paus. II. 17. 5. See also passages in Overbeck's *Schriftquellen*, etc. 143–146. We attach some importance to this tradition as regards the earliest images of Hera, and shall refer to it when dealing with the terra-cottas from the Heraeum.

The sons of Triopas are Iasus and Agenor. In the case of Iasus we again have traces of great confusion of tradition, inasmuch as he is alternately called the son of Triopas, the son of Phoroneus, and brother of Pelasgus and Agenor[1] son of Argus and Evadne or Peitho, etc.[2] He is father of Io. We dare not enter here into the problems grouping round Io, in whose story we cannot go far wrong if we see either an indication of the spread of the Argive people far into the distance, to Byzantium, Ethiopia, and Egypt, — or at least some indication of intercourse between the Argive people and those of these distant realms. Nor can we here decide the puzzling question of Io's relation to the Hera cult in Argos and in Euboea, her identification with the cow, or even her possible identification with Hera herself. We can only point to the more sober records concerning her, which identify her with the first priestess of Hera under the name of Callithoë who headed the list of priestesses preserved at the Heraeum.[3] It is she who decorates the earliest image of Hera at the Heraeum in the form of a pillar (*κίων*) with ribbons and wreaths.[4] Thus, leaving all the fanciful legends aside, we have a personality intimately connected with the worship of Hera in the Argive district.

The line of rulers proceeds in the son of Io's uncle Agenor to Crotopus, her cousin, who is succeeded by Sthenelas, a name which we meet with in a slightly different form in the subsequent tradition of the city of Argos and which again appears in the Homeric story associated with this district.

With Gelanor we come to a period which undoubtedly has indications of troubled times and the passing of Argive sway into other hands, — from Gelanor to Danaus.

But Danaus in all traditions is of the blood of Argive kings, though he comes from abroad. As the tradition grouping round him points to a violent change in the ordinary succession of previous rulers, it also confirms the previous existence of generations of indigenous rulers. This important figure, who undoubtedly comes in or returns from abroad, probably from Egypt, illustrates the mythogenetic "law," which we referred to above, in concentrating upon himself a rich layer of myths. This is especially the case with the Danaids, his daughters, who are ultimately identified with the nymphs guarding the wells by means of which an early ruler increased the fertility of the dry Argive plain.

It is with one of his daughters, Hypermnestra, that Lynceus, the only survivor among the sons of Aegyptus, is wedded. Lynceus succeeds Danaus, either in the natural course of events or by slaying him, and is in turn succeeded by his son Abas.

It is difficult to determine what is the relation of this Abas to the warlike tribe, the Abantes, localized in Euboea. But the connection between Euboea and Argos is fully indicated throughout all traditions. It is to Abas that his father Lynceus gives the shield of Danaus which strikes terror among his enemies,[5] and it is owing to this relic shown in the Heraeum that, tradition has it, bronze shields were given to the victors in the games and that these games received the name of *ἀσπὶς ἐν Ἄργει*.

As Danaus marked a change in the normal development of Argive rule, so another new era opens at the death of Abas, who, according to the account given in Pausanias, divides the Argive district between his two sons, Acrisius and Proetus. The district is naturally divided by the Inachus, Acrisius taking the western half, and Proetus the eastern half. But the brothers are from the very beginning[6] inimical to one another. Proetus

[1] Enstath. p. 330, 39.
[2] *Schol.* Eurip. *Phoen.* 1151 (1123, etc.).
[3] Cf. Roscher, *Lex. s. v.*
[4] *Phoronis* (*fr.* 4) *ap.* Clem. Alex. *Strom.* I. 25, p. 418.
[5] Hygin. *Fab.* 170 and 273.
[6] According to Apollod. II. 2. 1. these twin brothers were at variance even before they were actually born.

has to leave the country, and finds a shelter with Iobates of Lycia, whose daughter Antea or Sthenoboea he marries. He then returns and holds his portion of the plain. He brings with him the Lycian masons who build for him his fortress and palace at Tiryns. These foreign artisans thus introduce a new form of architecture and fortification among the communities civilized by Phoroneus. It is important to remark that no such act is attributed to Acrisius at Argos, and that we have no ground for believing that up to this time the city of Argos had such fortifications. It is two generations later that Perseus builds the walls of Mycenae; and we are thus not astonished to find that, while the Iliad speaks of Tiryns as *Τίρυνθα τειχιόεσσαν* and of Mycenae as *ἐυκτίμενον πτολίεθρον* and *εὐρυάγυια Μυκήνη* and of Ilios's *κλυτὰ τείχεα* or of the city as *εὐτείχεον*, etc., there is no attribute of this kind attached to the term Argos in the Homeric poems.[1] Acrisius is followed by his grandson, the son of his daughter, Perseus.

In connection with this prominent figure of Perseus again legend and myth have been freely developed. But the account of his life and deeds points, on the one hand, to foreign travel (Seriphus and Ethiopia) and, on the other hand, to Argos and Thessaly. The story of his accidentally killing his grandfather Acrisius at Larisa in Thessaly, or at Argos-Larisa (the early name for the city of Argos), points to an ethnical connection between Thessaly and Argos. He then exchanges territories with the son of Proetus, Megapenthes, or wrests the district from him. And we now find Megapenthes established on the Larisa-Argos side, and Perseus on the other or Tirynthian side. The latter now goes farther inland to the north end of the plain, and there founds the fortress-city of Mycenae.[2] As with Acrisius and Proetus we had the foreshadowing of a political division of the Argive district, which before had a unity of rule, so now we have a distinct and clear dualism fixed by definite fortified cities. The tradition concerning Acrisius and Proetus seems to be based upon disunion. It leads to the building of the Tirynthian fortress; then follows the fortification of Mycenae; and with Megapenthes begins the real establishment of the city of Argos. For it is a noteworthy fact that the genealogical table which Pausanias derives from the city of Argos does not begin with Acrisius or Abas but with Megapenthes.

It is not necessary for us to continue a detailed consideration of the succeeding rulers at Mycenae and the city of Argos as illustrated in the table given above. It continues from Megapenthes for at least seven generations, with the indications of internal dissensions and changes, until, in the time of Cylarabes at Argos, Agamemnon takes possession of Mycenae, and his son Orestes extends his rule over the city of Argos, over Arcadia and into Laconia.

The advent of the Atridae thus marks another epoch, which, however, does not bear such clear traces of foreign irruption. But it may be admissible to adduce even a poetic tradition in so late an authority as Dictys Cretensis (I. 16) to show that the Heraeum maintained its religious sway during the period of the Atridae at Mycenae. For it is at the Heraeum that Agamemnon is reported to have been chosen leader of the expedition against Troy.

The great change in the leadership of the Argolid takes place when in the time of Tisamenus the Dorians flood the country.

In giving this genealogy of rulers in the city of Argos as it is linked to the earlier series of indigenous rulers which we found preserved in the Heraeum tradition, the link

[1] See my note on 'The Argive Heraeum and Bacchylides, xi. 43–84,' *Classical Review*, December, 1900.
[2] Paus. II. 16.

being in Megapenthes, I have not considered the house of Melampus, who, as Pausanias tells us, was the ancestor of six kings in six generations down to Amphilochus, son of Amphiaraus. I have not done this because, as Pausanias continues, "the native dynasty of the house of Anaxagoras outlasted the other two." Nor have I referred to that splendid figure in the Homeric poems, Diomed, who is probably connected with the house of Bias, inasmuch as the name Aegialeus occurs in the genealogy and Aegialea was the wife of Diomed. I am not here concerned with an independent study of these Argive genealogies. The main reason why I have entered upon this topic at all is that any account of the striking evidence which our excavations yield, as regards the earliest monuments found, would be imperfect unless the literary traditions of these remote ages were considered and studied in the light of these finds, and the indications which they afford were used, to a certain extent, as guides in our threading of this labyrinth.

The main results which these early traditions thus yield us are, first, the confirmation in a striking manner of the chronological sequence in the history of the Argive plain — first Tiryns, then Mycenae, and then Argos; secondly, the confirmation of the evidence presented by our excavations of a considerable period of comparatively civilized life at the Heraeum, not only before the so-called Mycenaean period, but also before the building of the Cyclopean temple ascribed to Proetus of Tiryns. The study of these genealogies, moreover, confirms our belief that, though around many of these figures is grouped a rich and variegated mass of legend, and though there be variants and divergencies in the account of the succession among these rulers, the list, taken as a whole, distinctly points to the existence of organized social communities in this district long before the political life described by Homer.

With the death of Orestes and the reign of Temenus the hegemony in the Argive plain is transferred from Mycenae to the city of Argos; and here it remains ever after, until the whole district loses its prominent position in Greek history when the leadership is transferred to Athens and Sparta.

We can hardly doubt that the city of Argos obtained its real preëminence with the conquest of the land by the Dorians. What became of Mycenae and Tiryns in this period, it is difficult to determine exactly. On the one hand, we hear that all the inhabitants of the Argive district subdued by the Dorians, whose political centre was in the city of Argos, were repressed into a position corresponding very much to that of the Lacedemonian helots and were called γυμνῆτες or γυμνήσιοι.[1] As contrasted with the inhabitants of the city of Argos they became metics, or, as they were called from the first of these subdued centres, Orneae, περίοικοι Ὀρνεᾶται.[2] Mycenae certainly appears after this time to have held a dependent relation to the city of Argos. On the other hand, both Mycenae and Tiryns must have retained a considerable amount of independence; this is evident from the fact that Mycenae sent eighty men to Thermopylae, and Mycenae and Tiryns together 400 men to Plataeae, while Argos sent none. At the close of the sixth century B. C., moreover, we find that the slaves at Argos, the *gymnesii*, after their successful revolt, settled at Tiryns and held this place against the Argives for some time.[3]

During the whole of this Argive period the Heraeum, no doubt, retained its religious importance over the weakened centres of Mycenae and Tiryns as well as over the Dorian

[1] Poll. III. 83.
[2] Herod. VIII. 73; cf. also Strab. VIII. 6. 11. 372 and Paus. V. 23. 2.
[3] Herod. VI. 83.

city of Argos. But we must not forget that, with the rise to power of Temenus at Argos and the prominent position which that city held as the capital of the Dorian confederacy or "amphictyony," new temples and new cults were established on the western bank of the Inachus and in closer proximity to the city itself; and that, moreover, as was indicated above (p. 4), the new national religion and divinities of the victorious invader were naturally pushed forward as much as possible. Thus a more or less conscious attempt would be made to give prominence to such a cult as that of Apollo Pythaeus, who was the religious expression of the distinctly national Dorian supremacy, and whose temple on the Larisa of Argos was the local centre for the Dorian league of cities (Cleonae, Phlius, Sicyon, Epidaurus, Troezen, and Aegina). We can thus understand how under the Dorians there may have been a tendency to counteract the dominant supremacy of the Heraeum. Perhaps it was this spirit of Dorian separatism which still survived into the fifth century B. C. and caused the city of Argos to refrain from sharing the glory of Thermopylae and Plataeae when Mycenae and Tiryns entered the lists.

Still, as was remarked above (pp. 4–6), the overpowering prestige of the Heraeum, the most ancient of the great centres of ancient Hellas, withstood all these temporary attempts at repression, and it retained its supreme sway and its high position in the Greek religious world so long as the Argive district itself remained a place of importance. With the successors of Temenus, however, the Dorians could not retain for any great period the preëminence which Argos had previously enjoyed. For after Medon, who succeeded Cisus, as second after Temenus, the power of Argos began to wane. It is then, about the ninth century B. C., that the great struggle with Sparta began for the possession of Cynuria,[1] and it is well known who ultimately carried off the victory and gained undoubted preëminence in Peloponnesus. The rulers following Medon, Thestius, Merops, Aristodamidas, Eratus, maintained this struggle. Then followed one great figure who again gave preëminence to Argos, namely, Phidon. Under this powerful ruler, Argos revived its supremacy. He is, however, especially interesting to us for his more peaceful deeds in the history of ancient civilization; for to him is attributed, not only the establishment of a standard of fixed weights and measures, but also the coinage of money. His activity probably belongs to the second half of the eighth century B. C., though according to some it may have extended into the seventh century. We shall see of what interest he is in connection with the results of our excavations, when we come to give a summary account of the metal work there found.

A few words may suffice to indicate the subsequent history of the Heraeum in strictly historical times. After Phidon the power of Argos declines steadily during her struggle with Sparta. The crushing victory which Cleomenes of Sparta gained over the Argives about B. C. 520 is immediately connected with the Heraeum. For, as we are told by Plutarch,[2] when the Spartan had reduced the plain he mockingly asked for the keys of the temple that he might sacrifice to Hera. But the doors remained locked, and the heights were guarded by the enemy. So he had to remain content with sacrificing below the temple. Herodotus[3] makes him justify himself to his accusers after his return to Sparta by referring to an oracle and the miraculous phenomena on the image of Hera in whose sanctuary he had sacrificed.[4]

If Argos lost its political preëminence after the age of Phidon, it on the other hand

[1] Paus. II. 19. 2.
[2] Plutarch, *Cleom.* 26.
[3] Herod. VI. 76, 82.
[4] Pausanias (II. 20) gives other reasons why he did not actually take the city.

always retained its high position among the communities of Greece as a centre of the highest culture, its preëminence in music and in art. In the first half of the fifth century B. C. it was the home of the most famous school of sculpture, for it is to the sculptor Ageladas at Argos that the three most prominent artists of that age are reported to have gone to learn their craft, namely, Myron, Phidias, and Polycleitus. Under Polycleitus the fame of Argive sculptors rivaled that of Athens, and stood alone in its supremacy after the death of Phidias. These traditions of art maintained themselves through many generations of artists after Polycleitus. And when in 423 B. C. the old temple was burned and the new temple erected by Eupolemus was adorned with the sculptures of Polycleitus, the Heraeum received an importance and a splendor which, to some extent, counterbalanced the loss of preëminence which, as the religious centre, it had held in the centuries when the term "Argos" stood for the most representative part, nay for the whole, of the Hellenic world. With the growth and preponderance of other political centres in the subsequent history of Greece and the rising preëminence, not only of the other religious centres themselves, but also of the religious importance and weight of other divinities — a process which strikingly follows in the wake of political changes in the history of Greece — the Heraeum did not retain the highest position in the ancient religious world. It is after the downfall of Greek independence that, under the Romans, the Argolid again receives comparative political importance, and by accounts of the gifts of Hadrian and Nero,[1] and by the vestiges of Roman buildings which our excavations have laid bare, we have evidence of this late revival.

We cannot follow the history of the Heraeum through the Byzantine, Mediaeval, Frankish, Venetian, and Turkish times. If, however, we can picture in our imagination the ten or more splendid buildings erected on its lofty site, gleaming with their white marble over the distant plain, we can well understand how these late "Vandals," whether Christians or Moslems, were attracted by it, and how it had to pay the penalty of its preeminence and beauty by becoming the quarry from which they drew the material for the erection of their churches, fortifications, and dwellings in the modern Nauplia and Argos and in the villages of the plain.

THE EVIDENCE OF THE FINDS AS TO THE AGE OF THE HERAEUM.

The records of ancient traditions which we have just examined thus confirm the evidence furnished by the general topography of the sanctuary as well as by the special topography of the site as revealed in the relation of extant buildings to one another and their relative changes. The general conclusions to which these sources of evidence point are further strengthened when we examine the finds of individual objects made on the site during our excavations. In the examination to which I wish to subject these finds in this place I am far from aiming at any complete account of these various objects in themselves, nor do I propose in any way to give a complete list of what has thus been found. These will be separately dealt with by myself and the various collaborators at our excavations. But in this place I am considering these finds in their totality, in the relation which the several groups of objects bear to one another, and in the ultimate light which they can thus shed upon the history of the Heraeum as a whole, and hence upon the relation which the sanctuary and what it contained held to the general history of Greek civilization and art.

[1] Paus. II. 17.

When we consider the totality of our finds in individual objects, one striking fact at once impresses itself upon us from the very outset — a fact which I mentioned at once in the report of the first year's digging as well as in subsequent years,[1] — namely, the paucity of objects dating from the classical and later periods as compared with the vast number of primitive and pre-classical objects. Of marble sculptures we have, of course, the largest number dating from the construction of the Second Temple, about 420 B. C.; and the disappearance of other marble works, such as inscriptions, as well as of larger bronze figures, will be readily accounted for when we come to consider these objects. But the paucity of works from the "classical" and later periods becomes more striking with regard to vases, terra-cottas, small bronzes, engraved stones, etc. Here we should certainly have been justified in expecting to find objects counting at least by hundreds when compared with the mass of pre-classical objects, which are numbered by thousands. Yet, as we shall see, we have but few specimens of these objects, — in fact they are counted by units.

To account for this striking phenomenon I would make the following suggestions: —

1. The position of the sanctuary itself on the hill-slopes, in a district where the occasional rains sweep down with sudden violence and wash all before them, would naturally cause all smaller objects on the immediate surface to be washed down the slopes and to spread far afield over the plain. And this would be the case especially after the masonry and stones, massed on the surface, which would have arrested the downward flow of portable objects, had been carried away as building material by the later hordes that passed over the Argive plain. The peculiar situation of the Heraeum would thus favor the dispersion of the later objects as compared with objects originally on a level site. But even on such level sites the same conditions have been found to prevail, and have, for instance, been noticed by the German excavators at Olympia.[2] In speaking of the large proportion of pre-classical smaller objects there found, Furtwängler says: "By far the greater portion of our bronze finds are votive offerings or fragments of these of the early period which had already found their place below the earth before the classical epoch. That it was just the lowest layers which were richest in bronzes is to be explained by the fact that the simple, and partly rude, votive offerings of the oldest times had subsequently made room for others, and had come under the protecting cover of the earth at an early period; while, on the other hand, the votive offerings of the classical period were highly valued and carried off or cast in the melting pot in later ages by people who prized them, at least for their metallic value."

We must remember, moreover, that the chief places in which we found these smaller objects were all far below the level of the stylobate, i. e. below the actual necessary foundations of the Second Temple.

Though this fact undoubtedly accounts for a good deal, we must still feel astonished that on various points of the site we did not come upon a greater number of objects belonging to the classical and subsequent periods.

2. To account for this we must consider also the possibility that in classical times, with the rise of the city of Argos and its political supremacy over the district, as well as with the numerous other sanctuaries there built, the Heraeum may have lost the position of *unique* importance which it had previously occupied, and may thus not have attracted the same number of pious donors as was previously the case.

[1] See *Reports*, 1892–95.

[2] *Olympia* (*Architectur*, Dörpfeld), vol. II., and especially *Die Bronzen* (Furtwängler), vol. IV. pp. 1 ff.

3. Finally, we must not overlook a very important point which applies not only to the Heraeum, but to the whole of Peloponnesus and of Greece. If the later hordes carried off the metal they found, as well as objects of intrinsic value, we cannot believe that they would have transported or annihilated ceramic works, both vases and terra-cottas. Now it is with regard to these that the puzzling phenomenon which we are endeavoring to account for most clearly presents itself to us. Is it not possible, and even probable, that the early style of working cheap objects, manufactured by inferior artisans and sold by small hucksters at the gates of the temple-precinct, continued and fixed to some extent the ruder ancient style of workmanship handed down from the earliest ages? This makes it all the more incumbent upon us to bear in mind, that, though such objects probably continued to be made in later times, they even then illustrate the earlier and cruder phases of art and craft which they continue. Some can be proved to be of earliest date, some may be of a later origin; but the style of both is the same, and the later are merely a continuation of the earlier. But when, for instance, we find on this site comparatively so few vases, both black-figured and red-figured, of the ordinary Greek type, while we find later developments of the Argive (or so-called Proto-Corinthian) and Corinthian styles which mark the supreme finish of later dates — may we not then conclude that these typical black and red figured vases were never manufactured in the Argive district?[1] With the exception of Corinth they were perhaps never made in Peloponnesus, and found the real centre for their industrial production at Athens, Eretria, Corinth, and in Apulia, Campania, Etruria, and other Graeco-Roman centres.

Perhaps all these three causes together may have had their influence in affecting the general proportion of the objects we have found. Yet, as I have said before, by far the greater number of these objects were found in layers which obviously antedate the building of the Second Temple — nay, the fifth century B. C. Still it would be rash to say that the actual provenience (*Fundstelle*) was, in the case of most of these objects, a safe guide to their chronology within the broad outer limit I have just given. For we must consider: (1) the rough, uneven, and sloping ground occupied by these various buildings; (2) the fact that by far the greater portion of these objects were found in the ground surrounding the Second Temple platform, which ground was evidently made even and smooth, strengthened by supporting walls, for the preparation of the building; and the hollows and sides of the terrace were filled with what builders call "dry rubbish," probably taken from the site of the burnt and destroyed temple above and packed with objects which had accumulated during centuries; and (3) that the more rugged second platform before the building of that temple served for some sacred function in the earliest times, and most probably contained a great altar, and that thus it would accumulate such objects round it in the "black layers," which we found here like those found by the excavators of Olympia round the altars there. When we consider these facts, we have even less ground for using the provenience as a definite means of fixing the date than the German excavators had at Olympia. But even there Furtwängler[2] has conscientiously remarked: "Though the general characteristics of the layers as defined by us were easily recognizable throughout, they are still individually and sharply defined at but few points to allow of more definite chronological distinctions. Generally these layers gradually run into one another, and often their regular succession is disturbed. This

[1] Herod. V. 88 amply accounts for this. The Argives instituted an embargo on Attic pottery. Cf. Hoppin, 'The Argive Exclusion of Attic Pottery,' *Classical Review*, 1898, p. 86.

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could hardly be otherwise with the gradual construction of larger and smaller buildings and bases, of aqueducts and, at last, even of Christian graves. For these all necessitated an upheaval of the lower layers. It could thus happen at any time that older objects were transported from the lower to the higher layers, also that later objects found their way to greater depths. The individual occurrence of objects in this or that layer can therefore only be used with great caution for chronological conclusions." Furtwängler finds such conclusions admissible only when there is a regular recurrence of objects in a definite layer. Finally he points to a difficulty which *a fortiori* applies to the conditions of our excavation: "For only in comparatively few instances," he says, "have we accurate record of observations in individual finds of this kind. In order to carry this out systematically at every point in an excavation of such extent, it would have required a special staff, specially trained for this purpose, and a slow and very careful peeling off of single layers. Unfortunately the conditions of our excavations did not admit of such care."



FIG. 13. — EARLY SHAFT-TOMB CONTAINING VASES OF DULL-COLORED "MYCENAEAN" STYLE.

With these limitations we can, however, point to certain facts which may be claimed as chronological landmarks beyond the broad distinctions of the earlier and later temples and buildings.

1. Many of the earlier objects discovered on the upper terrace were found not only below the burnt layer which marked the destruction of the early temple, but below the portion of the extant wall of this temple which was visible when the temple was complete. The small piece of stylobate, which, fortunately for us, still remains standing on the Old Temple platform, is regularly and smoothly cut half way down; but below this point it remains rough. It is manifest that the rough portion was not meant to be seen when the temple was complete. We are thus justified in claiming for the objects found below this point a period antedating the first temple. Objects were also found below the huge Cyclopean stones of the supporting wall.

2. The rude smaller and earlier walls, referred to above as being on the south slope of the Second Temple platform, evidently belonged to a period when this platform was in all probability used as an altar. Portions of these walls were built on the bed-rock; and the objects found on this bed-rock level most probably belonged to the earliest period of their construction.

3. The small horizontal tomb (Fig. 13) found immediately to the south of these walls contained quaint vases decorated with linear ornaments in dull (*mattfarbige*) colors (see below, Fig. 22); while the rock-cut beehive tombs (Fig. 14) found by us in the vicinity of the Mycenaean Road contained Mycenaean vases[1] of Furtwängler-Loeschcke's third or fourth periods.

[1] These will be described by Dr. Hoppin in the section on Vases.

3. Finally, we must not overlook a very important point which applies not only to the Heraeum, but to the whole of Peloponnesus and of Greece. If the later hordes carried off the metal they found, as well as objects of intrinsic value, we cannot believe that they would have transported or annihilated ceramic works, both vases and terra-cottas. Now it is with regard to these that the puzzling phenomenon which we are endeavoring to account for most clearly presents itself to us. Is it not possible, and even probable, that the early style of working cheap objects, manufactured by inferior artisans and sold by small hucksters at the gates of the temple-precinct, continued and fixed to some extent the ruder ancient style of workmanship handed down from the earliest ages? This makes it all the more incumbent upon us to bear in mind, that, though such objects probably continued to be made in later times, they even then illustrate the earlier and cruder phases of art and craft which they continue. Some can be proved to be of earliest date, some may be of a later origin; but the style of both is the same, and the later are merely a continuation of the earlier. But when, for instance, we find on this site comparatively so few vases, both black-figured and red-figured, of the ordinary Greek type, while we find later developments of the Argive (or so-called Proto-Corinthian) and Corinthian styles which mark the supreme finish of later dates — may we not then conclude that these typical black and red figured vases were never manufactured in the Argive district?[1] With the exception of Corinth they were perhaps never made in Peloponnesus, and found the real centre for their industrial production at Athens, Eretria, Corinth, and in Apulia, Campania, Etruria, and other Graeco-Roman centres.

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Fig. 13. — Early Shaft-tomb containing Vases of dull-colored "Mycenaean" Style.

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[1] These will be described by Dr. Hoppin in the section on Vases.

4. Besides stone implements which point to the Neolithic period, copper and bronze were found in every part of the excavation. Iron was found in greatest profusion at the northeast corner of the Second Temple platform, as well as at the Southwest Stoa. We have thus traces of the Neolithic, the Bronze, and the Iron Ages on this site.

With these facts before us we must begin a general survey of the individual objects found, in view of the light which they may throw upon the general historical questions before us.

TERRA-COTTA IMAGES.

In dealing with the summary evidence of the terra-cottas we must premise a few words on plastic art in general. Besides the sculptures of the Second Temple we found a few isolated fragments of archaic or transitional sculpture in stone, but no actual stone sculptures of the earlier dates. Though there is one exception in carved stone-work to be found in the block which was subsequently used in one of the walls to the north of the Second Temple upon which the early waved pattern has been carved, there is no instance of such early sculpture in stone. From the paucity of even primitive terra-cotta images on the Old Temple platform we may naturally conclude that the beginnings of worship on this site were in an aniconic form. The first step to the creation of an image was the erection of the pillars or *kiones* which Pausanias still saw there in his time, and of the existence of which in other centres of Greek worship we have ample evidence.[1]



Fig. 14. — Beehive Tomb near the Heraeum, on the road to Mycenae.

Now, as I ventured to surmise at the time of its discovery,[2] it is highly probable that in the lower fragments of a large limestone "pillar" we have preserved to us the very *kion* which Pausanias saw, and which symbolizes the first image to Hera on this ancient site (see Fig. 15). The stone in question is carved into a pillar tapering towards the top in the rudest manner, evidently with primitive tools, the marks of which can still be perceived. At the broader "foot" there is a projection forward which serves as a plinth to keep the pillar in an upright position, the projection being merely in front and not behind. It thus corresponds to the lower portion of the rudest images in stone and clay of which we have cognizance. The edges at either angle in front are leveled off so as to make it hexagonal. This pillar could have served no architectural purpose of which we know, and, standing upright as it does, with all the marks of the most primitive workmanship, we are justified in believing that such an object of no intrinsic value, which survived to the second century of our era, might be and is preserved to us now.

[1] Pausanias (II. 9. 6) mentions one representing Artemis Patroa at Sicyon. He also saw thirty of these at Pharae in Achaia, each having the name of a god (VII. 22. 4). Coins and vases give us later renderings of these early objects. So an Apollo on a coin of Ambracia (Overbeck, *Griech. Kunstmyth.* V. pp. 1–5, Münztafel i. Nos. 1–7). A coin of Ceos has Hera and Zeus in the form of two pillars (Overbeck, *l. c.* I. p. 5). So also Zeus is represented as a square pillar on a vase (Gerhard, *Akadem. Abhandl.* p. 59, Nos. 2, 3, 4, 7; cf. Collignon, *Hist. Sculpt. Gr.* p. 103).

[2] See *Report*, 1892, and my *Excavations of the American School at the Heraion*, etc. p. 19.

Of primitive idols in stone and marble chips, such as were found at Hissarlik, Paros, Naxos, Amorgos, etc., we have no specimens here at the Heraeum. On the other hand, we have the richest collection ever found of terra-cotta idols, presenting a new and unbroken series from the very earliest to the classical times, and though these terra-cottas will receive more detailed treatment in a special chapter by Dr. Chase and myself, we must now consider them in their general connection, and their bearing upon the main point before us.



Fig. 15. — Early stone "Pillar Image." From the Heraeum.

I may say at once that we find types of "Mycenaean" figurines at the Heraeum, but we also find a much larger number of types distinctly earlier in an unbroken series, among which we can distinguish at least two categories.

The first and earliest type was probably developed out of the symbolic *kion* (Fig. 16). The primitive coroplast has merely taken small lumps of clay, and has fashioned them into a mere suggestion of a human form by indicating projections for the arms. The lower portion of the body remains in rude, uneven roundness, and for the head he has merely allowed the upper portion to be squeezed into an almost conical shape. There is no further articulation, and no distinction of sex. But this primitive coroplast is not as yet tied down to any fixed conventionalized type, and so there is a gradual development and progress in his naturalism within the narrow range of his artistic power (Fig. 17). Gradually the arms become more extended, the clay is pinched more firmly, accentuating the waist still further, until, at last, the workman gives another pinch between his two fingers to the portion which he has left for the head, and proceeds to add two minute globules of clay on either side of this protuberance of the head to indicate the eyes. From this moment he proceeds to elaborate this bird-like face, adding a round circle of clay to the top, which is meant to indicate either the hair, or more probably, in this case, the *polos* or early diadem of the goddess Hera. Without indicating the sex of the figurine by means of modeling, he does so by the indication of dress; and to the bird-like head is added a series of ornate decorations running round the neck and breast from shoulder to shoulder, which soon becomes one of the most striking features in these Heraeum terra-cottas. In the special chapter on terra-cottas, we shall deal with the question whether these ornaments are necklaces with brooches at the shoulders, or scarves, or even wreaths of flowers, or, finally, indicate an elaborate folding and ornamentation to the top of the low-necked dress. We have summarized in a few words what really represents a most varied series, illustrative of a very long and continuous development.



Fig. 16. — Primitive Terra-cotta Figurine. From the Heraeum.

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Fig. 15. — Early stone "Pillar Image." From the Heraeum.

I may say at once that we find types of "Mycenaean" figurines at the Heraeum, but we also find a much larger number of types distinctly earlier in an unbroken series, among which we can distinguish at least two categories.

The first and earliest type was probably developed out of the symbolic *kion* (Fig. 16). The primitive coroplast has merely taken small lumps of clay, and has fashioned them into a mere suggestion of a human form by indicating projections for the arms. The lower portion of the body remains in rude, uneven roundness, and for the head he has merely allowed the upper portion to be squeezed into an almost conical shape. There is no further articulation, and no distinction of sex. But this primitive coroplast is not as yet tied down to any fixed conventionalized type, and so there is a gradual development and progress in his naturalism within the narrow range of his artistic power (Fig. 17). Gradually the arms become more extended, the clay is pinched more firmly, accentuating the waist still further, until, at last, the workman gives another pinch between his two fingers to the portion which he has left for the head, and proceeds to add two minute globules of clay on either side of this protuberance of the head to indicate the eyes. From this moment he proceeds to elaborate this bird-like face, adding a round circle of clay to the top, which is meant to indicate either the hair, or more probably, in this case, the *polos* or early diadem of the goddess Hera. Without indicating the sex of the figurine by means of modeling, he does so by the indication of dress; and to the bird-like head is added a series of ornate decorations running round the neck and breast from shoulder to shoulder, which soon becomes one of the most striking features in these Heraeum terra-cottas. In the special chapter on terra-cottas, we shall deal with the question whether these ornaments are necklaces with brooches at the shoulders, or scarves, or even wreaths of flowers, or, finally, indicate an elaborate folding and ornamentation to the top of the low-necked dress. We have summarized in a few words what really represents a most varied series, illustrative of a very long and continuous development.



Fig. 16. — Primitive Terra-cotta Figurine. From the Heraeum.

A new stage is reached when these figures that have been represented as standing erect are represented as seated (Fig. 18). This is done in a quaint manner, in that the flat lower portion of the figure is bent forward, thus forming a step-like projection, and then two thin, tusk-like pieces of clay are stuck on behind, like the legs of a chair, which made it possible for the figurine to be set down in this quasi-seated posture. In technique and detail work, this second class is also much further advanced. Besides the elaborate ornamentation round the shoulders, the arms are in many cases actually modeled, and the waist is indicated with greater naturalism. A few more ambitious coroplasts have attempted to model the whole chair or throne, and actually to place one of these figures upon it. When we recall the fact that the erection of a seated image in wood is attributed to Pirasus,[1] the son of Argus, and that Pausanias saw this early image made of pear-tree at the Heraeum, whither it had been brought from Tiryns, and that, further, this sacred image was seated, — we may attribute the innovation in our terra-cottas which, from this point, belong chiefly to the seated type, to the influence of such an image endowed with great sanctity. But the idols of this class do not rise above the bird-shaped head; and, in spite of the prominent influence of some such seated examples, even upon the standing types of this period, there is no hard and fast conventionalized type to be found. I mean by this, that with all the quaint and crude artistic imperfections of the primitive coroplast's work, there is a free and naturalistic tendency, which leads him to produce varieties, with marked differences in the extent to which he indicates articulation and individual details among these types.



Fig. 17. — Early Female Figure, showing Development of Drapery. From the Heraeum.



Fig. 18. — Early Seated Figure. From the Heraeum.

It is important to note that specimens of these two earliest types were found by Schliemann at Tiryns,[2] but that to my knowledge few have been found at Mycenae.[3] We thus call this second category, marked by the seated figure of earliest technique, Tirynthian-Argive.

The next, or third category with which we have to deal, the Mycenaean type (Fig. 19), is found chiefly at Mycenae and Mycenaean centres; and has been found also at Tiryns and the Heraeum. As in the graves of Mycenae, so in the rock-cut beehive tombs with Mycenaean pottery,

[1] See above, p. 24.

[2] *Tiryns*, pp. 150 ff., figs. 77–93; p. 359, fig. 159; and Perrot-Chipiez, vol. VI. p. 750.

[3] Since I wrote this, Dr. Chase has informed me that in one "exceptional" grave at Mycenae, Tsountas has found isolated specimens of such terra-cottas.

discovered by us in close proximity to the Heraeum, these early images are found with the most beautiful specimens of Mycenaean ware in pottery as well as other materials.

At first sight it might appear that these thoroughly conventional figurines are earlier than some of those we have just described. They consist, in form, generally of a round elongated foot, like that of a cup, a flattened, more or less circular or semicircular body above it, again reminding us of a Mycenaean cup, and an upper portion which generally curves outward and leaves the top like the lip or rim of a vase. This general outline, in spite of all detailed variation, is kept in a fixed and stereotyped manner, and is adhered to as a convention by the modeler in so manifest a way, that he clearly tells us he does not intend to follow nature, though he is well able to do so. Thus in their bare outline they are further removed from naturalism than many specimens of the primitive type we have just examined. On the other hand, the fine clay of which they are made, the certainty of touch and neatness with which they are modeled in this conventionalized form, and, above all, the modeling and painted decoration on any portions which the artist chose thus to decorate, show a degree of artistic skill and a suppressed power of naturalism which is never to be met with in the works of the previous class, and is not always found in some of the succeeding classes. Within the circumference of this rounded, shield-shaped, flattened surface which represents the torso, the female breasts and the arms hidden under the drapery (compare Fig. 19) are indicated with great delicacy and skill, and are certainly out of keeping with the stiff convention of the outline form. Moreover, the painted ornamentation shows a power of free-hand brush-work, a fluency and variety of line, which are the reverse of conventional, and which, together with the glazed color used, are to be found only in vases of the Mycenaean order.



Fig. 19. — Mycenaean Type of Terra-cotta. From a Tomb near the Heraeum.

We are here brought face to face with a most curious phenomenon: whereas the chief distinctive characteristic of Mycenaean art in other spheres is its naturalism (especially when contrasted with the "Geometric" style which succeeds it), we have the most pronounced instance of stereotyped conventionalism in the form of these figures. But this archaeological paradox is most readily accounted for by the explanation which the facts invariably attending their discovery necessarily force upon us. These figurines are, we may say, almost always found together with Mycenaean vases; and their painted decoration betrays the hand of the maker of these vases. Their shape, moreover, is constructively and intrinsically "vase-like." They are distinctly ceramic figurines, and not coroplastic figurines. Now it was the Mycenaean potter who produced the greatest innovations and marks the greatest advance in ceramic art, — we may say for all times. But besides his chief characteristic of naturalistic painting and his introduction of glazed color into ceramic painting, there is one thing which appears to me almost greater and more important, — he was the first really to establish constructive and final ceramic forms and shapes for the vessels that were to receive, retain, and preserve fluids. And it is this central tectonic attitude of mind of the ceramist which has influenced him in fashioning these Mycenaean figurines, and in giving them the stereotyped form to which he adheres. We have this interesting phe-

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nomenon in the early history of clay-work: the primitive clay-worker is before all a coroplast, and actually models his vessel with his hand. He is thus sometimes misguided into giving eccentric animal or human shapes to some of his early vessels.[1] The Mycenaean clay-worker is before all a ceramist, and thus introduces ceramic conventionalism into his terra-cotta figurines.

It is curious to note how the vase-rimmed head is even introduced into a most complex terra-cotta of this Mycenaean class, in which a female figure is represented as holding an infant in her arms.[2]

This third Mycenaean class was not powerful enough to drive the previous classes out of the field, for these show a continuous development.

It is to Dr. Chase that I owe the identification of a "Dipylon" class of figurines, recognized by him as such chiefly by the colored ornamentation on the dresses which indicate the Dipylon style (Fig. 20). These types, while presenting the same marked contrasts to those of the Mycenaean order as the previous classes, and showing a general relation to the more primitive figurines, are more advanced in the treatment of the head, in which they do not, however, attain the distinct naturalism of the succeeding class. The most marked fact to be noticed in this category is the extreme paucity of the specimens of human figures, — there is comparatively a greater abundance of animal terra-cottas of this class. This fact, it appears to me, can be explained by one of two causes: either the human figure was not frequently represented by the "artists" of the Dipylon period, or the people to whom they belonged did not dwell for a long period in the Argive district, nor exercise great influence upon the artistic life of the place.



Fig. 20. — Figure of the "Dipylon" class. From the Heraeum.

When we realize how imperfect and wooden, how completely "decorative" and conventionalized is the treatment of human figures on the Dipylon vases, we must at the same time realize that this purely conventional and decorative treatment does not lend itself to the spirit of art production in plastic works, — either in terra-cotta or stone. The statue and statuette as such, which arise out of a naturalistic as opposed to a decorative impulse, are not likely to be developed by such workers. In bronze, we might more readily find them, because the maker of bronze vessels and implements of peace and war would use the same technique

[1] See Schliemann's *Ilios*, pp. 340-345; 375, 377, etc.; Rayet-Collignon, *Hist. d. l. Ceram. Gr.* pp. 1 and 7.

[2] Ἐφημερίς, 1888, pl. ix. fig. 16; cf. also Perrot-Chipiez, *op. cit.* VI. p. 743, and Collignon, *Hist. d. l. Sculpt. Gr.* I. p. 52.

of beating the metal, and might make such figures as ornaments or appendages to the implements.

When, however, we consider according to what I hear from Mr. De Cou, that there were also comparatively few specimens of bronzes in the Dipylon (i. e. the "Attic Geometric") style, and that, as I hear from Dr. Hoppin, even the vases of this style are of small number compared to those of the other classes, we are tempted to conclude that the people who represented this technique did not dwell so long on this site, and were either assimilated rapidly, or were not adapted to leave a lasting stamp upon art production.

The fifth stage is reached in that a marked advance is made among the seated idols: namely, the bird face is superseded by the human face (Fig. 21). To the profuse and elaborate decorations round neck, breast, and shoulders of the second type, we here have added most elaborate head-dresses, in which I can see not only varieties of the *polos*, but also floral ornamentations which probably refer to the Antheia side of the Hera cult, and for which flowers from the river Asterion were woven into wreaths. How long this human shape of Heraeum figurines continued we cannot determine. We are, however, actually at the gates of recorded history when we learn[1] that the Argive type of the human-shaped Hera was carried to Samos by Procles, the son of Pityreus, when the latter was expelled by the Dorians from Epidaurus. This would bring us to about the year 1000 B. C. This human-shaped image superseded the *sanis*, or board-shaped idol, which was previously worshiped at Samos.[2]



Fig. 21. — Figure of advanced Argive style (with human face). From the Heraeum.

The next (sixth) class, though not numerous, shows in subject, technique, and style the infusion of oriental influence.

After this sixth category, our terra-cottas lead us to the archaic Greek type of figurine corresponding to the erect *bretas*-shaped statues of the class of the Artemis found at Delos.[2]

An eighth class is distinguished from this as marking the advanced archaism of the close of the sixth and the beginning of the fifth centuries B. C.; until, finally, we have

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a few fine specimens of heads forming a ninth class, and illustrating good Greek art of the fifth century B. C.

Before drawing the conclusions to which this survey of our terra-cottas leads us, I must point to the interesting collateral evidence furnished by the earliest types of bronzes found at Olympia and classified in so thorough a manner by Professor Furtwängler. We cannot but regret that the terra-cotta figurines, of which he tells us large numbers were found in the lowest layers round the Heraeum at Olympia,[1] did not receive the same thorough treatment at his hands, and are not represented in a sufficient number of specimens in the plates which illustrate the German publication. On plates xviii. and xix. of the Olympia Bronzes he has presented a most instructive series of bronze animals from the earliest primitive class to the fixed type of Geometrical style, the so-called Dipylon horse.[2]

The earliest and rudest primitive bronzes representing animals are made out of thin, flat sheets of bronze, and have, like our earliest terra-cottas representing human figures, only the vaguest suggestion of natural forms. The thin sheets of metal are cut to indicate legs and head, and are then twisted in various directions. The style of this rudest class is called by Furtwängler the "sheet-style" (*Blechstyl*). Then follows a very numerous class which evidently has been influenced by the process applied in fashioning such primitive figurines in terra-cotta, to which he gives the name the "*Terra-cottenstyl*."[3] More and more within this long series, presenting a most interesting evolution, the early bronze-worker is trying to develop a style suited tectonically to his manipulation of bronze in beating and casting, until, at last, he arrives at a fixed settled shape of horse from this technical point of view which, irrespective of naturalism or the exact imitation of what he saw in nature before him, satisfies his artistic instinct and becomes a fixed type for the small bronze horse. This stereotyping of bronze technique in this direction checks development and free effort in the tendency towards naturalism which is noticeable in the earlier primitive ware; and apparently for many generations after this establishment of the Dipylon horse, that form holds the ground and practically ends the series as far as these early layers of discoveries at Olympia are concerned.[4]

Somewhere within this series is to be placed a comparatively small number of animal representations,[5] into which the goat seems for the first time to have been introduced, which are strikingly contrasted with the main continuous series in that they possess advanced naturalism. I would suggest that these are the strictly "Mycenaean" types which apparently were found in the vicinity of the Pelopeum wall.

Now the excavators of Olympia tell us that the terra-cottas come from the very earliest layers, and, as far as their position in the earth is concerned, correspond to the very earliest bronze figures found there. These terra-cotta human figures, to judge from the specimens which are published,[6] mark a later stage than our earliest figurines. They are much more advanced in articulation and the sex is clearly indicated. All these terra-cottas and bronzes were found in the "black layers" surrounding the earliest altar to the south of the Heraeum wall at Olympia, towards the wall of the Pelopeum. The lowest of these layers, and partly the second as well, are earlier than the building of the Heraeum of Olympia.[7] The earliest layer runs beneath the foundation walls of that temple.

[1] See *Olympia*, IV., *Bronzen*, pl. xvii. Nos. 279, 280, 281, 283, 284, in which a few specimens of terra-cottas are given.

[2] *Op. cit.* pls. x., xi., xii., xiii., xiv., xv., and xvi.

[3] *Op. cit.* pl. x. Nos. 106–133, pl. xi. to about Nos. 177 or 178.

[4] Pls. xiii., xiv.

[5] Pls. xi. and xii. Nos. 178–190.

[6] Pl. xvii. Nos. 279, 280, 281, 283, 284.

[7] Furtwängler, *Olympia*, IV., *Bronzen*, p. 2.

Now the Heraeum of Olympia, which is the oldest temple there, and, by these finds beneath it, points to a worship of Hera on this site before the worship of Zeus was there introduced, — this Heraeum of Olympia, we are told,[1] was built by Scilluntians eight years after Oxylus had taken possession of Elis, which would lead us back to the Dorian invasion (between B. C. 1100 and 1000) for the building of the temple. The remarkable replacing of the old wooden pillars by later stone ones has been carefully noted by Dörpfeld.[2] Dr. Penrose assigns this temple to the year 1445. The date given by Pausanias may refer to the erection of the stone pillars in the early temple, which retained its original orientation and was built there by Pre-Dorian people.

Be this as it may, we know that, long before the foundations of this Olympian temple were erected, the remains of the altar and the accumulation of primitive votive offerings in the black layers surrounding it point to many generations of Hera cult on this very spot. The terra-cottas found in these early layers are much later in style than Class I. and II. of our Heraeum terra-cottas. Thus the bronzes and terra-cottas of Olympia confirm the early date which we assign to our Pre-Mycenaean terra-cottas from the Argive Heraeum.

VASES.

The finds of early ceramic ware at the Heraeum are so numerous and complete, and have such important bearings upon the earliest art of Greece, that, in dealing with them here, we cannot confine ourselves to their consideration merely in the light of the striking illustration they offer to the main point which we have hitherto considered in the history of the Heraeum. For their bearing upon the early history of ceramic art in Greece is such that I venture to maintain they will lead to a new classification of this important branch of archaeological evidence, or at least to a thorough reconsideration of the classification hitherto accepted. Nay, beyond this I believe that these finds furnish most invaluable material for the study of the origin and development of art in general. But while this latter aspect is most important, so that we can hardly resist drawing conclusions which the objects presented by our spades have revealed to us, we feel that the introduction of so wide and far-reaching a topic would lead us too far and would be out of proportion to the main scheme of this publication. We must therefore reserve the treatment of this aspect of our finds for some future occasion. On the other hand, it would be impossible for us to utilize our collective material of vases for the information they give as to the earliest history of the Heraeum without considering the new light which these finds throw upon the whole classification of early Greek pottery.[3]

At the close of our first year's digging (in 1892) one fact of fundamental importance impressed itself upon me. And though I ventured to give partial publication to these views at the successive public meetings of the American School at Athens, I did not feel justified in fixing them in print until the huge number of specimens which we had transported to Athens had been cleaned, and to some degree classified by the intelligent industry of my colleague, Dr. Hoppin.[4] After careful observation of the material thus before us and the mature application of inductive principles, I now feel confirmed in the

[1] Paus. V. 16. 1.

[2] *Olympia*, II. (Architecture), p. 35.

[3] Since this was sent to the printer, among other important discoveries and publications, the striking discoveries of Messrs. Evans and Hogarth in Crete and the publication of Professor Ridgeway's *Early Age of Greece* mark a new departure in such inquiry. I am happy to find that these results in the main confirm the conclusions to which the Heraeum discoveries led me.

[4] The detailed classification of all the rich finds in vases will be given by him in the special chapter devoted to these works.

first impression which the excavations themselves forced upon me, and feel justified in submitting them to the judgment of archaeologists.

The preponderance on this site of so-called "Proto-Corinthian" ware attracted our attention at the very beginning of the excavations. And when further the fact forced itself upon our notice that in the distinctive characteristics of this ware there was a continuity, not only in its development from the earliest primitive to the latest vases, but also from the most inferior and cheapest hand-made vessel — probably sold for the smallest coin in the booths of the local potter before the walls of the sanctuary, together with the cheap and rude idols — to the most perfect specimen of delicate ceramic work, I then felt that we here had to deal with local manufacture peculiar to the Heraeum or the Argive plain, to which I propose to give the name of *Argive-Linear*. But if this be true, then the current and established classification of all the early Greek pottery will have to be reconsidered, and the modifications thus caused in this important class of archaeological evidence will tend to modify our views with regard to the early history of the Greek people.



Fig. 22. — Mycenaean Vase, with dull unglazed Color.
From Furtwängler and Loeschcke, *Mykenische Vasen*, pl. xxiv. No. 175.



Fig. 23. — Mycenaean Vase (from Ialysus), naturalistic, with lustrous Glaze.
From Furtwängler and Loeschcke, *Mykenische Vasen*, pl. v. No. 281.

The current view most widely accepted by archaeologists for the historical classification of early Greek pottery is chiefly based upon the fundamental work done by Furtwängler and Loeschcke[1] on Mycenaean vases. In a brief form this classification is marked by the following subdivisions.[2]

Primitive ware, for which we practically rely upon the finds of Hissarlik, consists chiefly of rough hand-made pottery, either of the simplest rounded bowl shape, with holes for suspension by means of a cord instead of handles, or eccentric human and animal forms, which I would call the *coroplastic phase* of early pottery. The decorations upon these are chiefly those modeled or incised. This category receives scant treatment at the hands of most writers on Greek ceramics, and is practically left as an unknown quantity,

[1] Furtwängler and Loeschcke, *Mykenische Vasen* and *Mykenische Thongefässe*.

[2] Cf. Von Rohden in Baumeister's *Denkmäler des Klassischen Alterthums*, article 'Vasenkunde;' Rayet et Collignon, *Hist. d. l. Céramique Grecque*; Dumont et Chaplain, *Les Ceram. d. l. Grèce Propre*.

preceding the second class with which the specifically Greek antiquities, as well as traditional history, have been supposed to begin, — namely, Mycenaean ware. This broad and diversified class includes a very early form of vase, decorated in color, which, especially in the types of Thera (Santorini), forms a transition from the primitive to the Mycenaean. As a matter of fact the Santorini vases cannot be distinguished in their essential qualities from the earliest specimens included among the Mycenaean vases. First, there are vases with dull, unglazed color (Fig. 22). From these rudimentary beginnings the Mycenaean vases rise through many categories, minutely distinguished by Furtwängler and others, to a very high form of ceramic perfection. This is especially the case when the new feature of glazed or lustrous color is added (Fig. 23), which gives such variety to their painted decorations and foreshadows the most beautiful vases of the later historical Greek periods. These vases found at Mycenae and on Mycenaean sites in company with beautiful work in gold and other materials have hitherto been connected with the Homeric descriptions of the surroundings in which the Atridae and their fellow heroes lived at Mycenae and elsewhere. The third category (Fig. 24) differs essentially from the Mycenaean class; and though it maintains, as regards the actual performance of the potter's skill, a very high standard, the peculiar taste in the forms adopted by him, as well as the peculiar system of painted ornamentation, mark a distinct change or break from the previous traditions which appear to vanish when this third class comes into the field. And as regards artistic feeling this third class distinctly shows a retrograde movement of a more inartistic people. This period has been identified with the inroad of the Dorians which swept away the Achaean civilization preceding it. From the peculiar style of ornamentation on these vases they are known as "Geometric," or, as some of the most striking examples were first found about the Dipylon gate of Athens, as "Dipylon" ware (Fig. 25). Next follows a fourth class of generally smaller vases of peculiar shape and refined workmanship, with neat linear ornamentation (Fig. 26), into which subsequently friezes of certain animals are introduced (Fig. 27), the so-called Proto-Corinthian ware, for which Dr. Hoppin has with good reason proposed the name "Argive."[1] This gradually becomes more elaborate and redundant in its decoration, until it naturally leads over to a class intimately related to it, namely, the fifth class, or Corinthian ware. It is at this point that oriental influences are manifest in the wealth, as well as in the specific details, of ornamentation. But in time these foreign characteristics are eliminated in this Corinthian ware, and the final emancipation from archaic conventionalism as well as from alien influences is gradually worked out in the establishment of the typical Greek style of historical times. This is done chiefly at Athens in the earlier black-figured and then in the beautiful red-figured ware



Fig. 24. — Mycenaean Vase, with lustrous Glaze, conventional.
From Furtwängler and Loeschcke, *Mykenische Vasen*, p. 29, fig. 17.

[1] See *Am. Jour. Arch.* 1900, p. 445.

first impression which the excavations themselves forced upon me, and feel justified in submitting them to the judgment of archaeologists.

The preponderance on this site of so-called "Proto-Corinthian" ware attracted our attention at the very beginning of the excavations. And when further the fact forced itself upon our notice that in the distinctive characteristics of this ware there was a continuity, not only in its development from the earliest primitive to the latest vases, but also from the most inferior and cheapest hand-made vessel — probably sold for the smallest coin in the booths of the local potter before the walls of the sanctuary, together with the cheap and rude idols — to the most perfect specimen of delicate ceramic work, I then felt that we here had to deal with local manufacture peculiar to the Heraeum or the Argive plain, to which I propose to give the name of *Argive-Linear*. But if this be true, then the current and established classification of all the early Greek pottery will have to be reconsidered, and the modifications thus caused in this important class of archaeological evidence will tend to modify our views with regard to the early history of the Greek people.



Fig. 22. — Mycenaean Vase, with dull unglazed Color.

From Furtwängler and Loeschcke, *Mykenische Vasen*, pl. xxiv. No. 175.



Fig. 23. — Mycenaean Vase (from Ialysus), naturalistic, with lustrous Glaze.

From Furtwängler and Loeschcke, *Mykenische Vasen*, pl. v. No. 281.

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of the classical period (7 and 8). In this rapid survey, I have of course omitted the minor intermediary subdivisions localized in the Greek islands and elsewhere.

What we are here chiefly concerned with is the relation which the Mycenaean vases and the style they represent hold to those forms with which in time and space they come into immediate contact. The chief and most striking characteristic of Mycenaean ware, besides the great advance that is made in the refinement and elaboration of the clay itself, and the characteristic variety of beautiful shapes which are given to the vases as such, is to be found in the distinct artistic quality of the painted decoration, which quality corresponds to that of the designs in precious metal, in cut stones, gems, and other materials. This characteristic is the free naturalism both in the feeling for line as well as in the forms, and in the life which these lines and colors render. And this freedom of naturalistic drawing is directly opposed, and marks an antithesis, to the geometrical or more mechanical feeling of ornamentation; and thus the decorations on the typical Mycenaean vase can be appreciated in their characteristic qualities by contrasting them with those of the Geometric vase by which they are succeeded, and by the mechanical feeling of primitive decoration in the vases which precede them. The Mycenaean principle would thus be naturalistic as opposed to decorative and linear, and freehand in drawing as opposed to the more conventional decorative feeling and mechanical drawing of the geometric order.



Fig. 25. — Dipylon Vase.
From *Mon. d. Inst.* IX. pl. 39.

While admitting, nay, confirming this distinctive attribute of Mycenaean vase-decoration, I on the one hand maintain that it does not apply to the earliest groups included in this subdivision, namely, the dull-colored vases, nor to a great number of later distinctly Mycenaean vases, especially small vases; and on the other hand, I would insist upon the fact that at no time was a certain geometrical element entirely excluded from the ornamentation of the Mycenaean vases. I may at once say now, what will receive fuller confirmation as we proceed, that, though, in the latest forms of Mycenaean vases showing signs of degeneracy, the growth of conventionalism prepares the way for their supersedence by the Dipylon vases, and shows transitional stages between the two, I maintain that also at the other end of the Mycenaean scale, at its earliest beginnings, we have a preponderance of geometric feeling.

The greatest confusion has been caused by the misnomer "Geometric,"[1] applied to the so-called Dipylon vases. As we shall see, the geometric feeling of ornamentation prevails in the earliest times, and is never lost in any period within the history of all these early vases. The characteristic difference in the application of this principle in the so-called Dipylon vase is not so much in the linear, meaningless decoration, as contrasted with the rendering of life and nature, as in the redundancy of geometrical ornament over the whole vase, which is thus subdivided by these designs into "compartments" that hold a mathematical relation to one another; and in the fact that these crowded elements of decoration are repeated, if not always with identity, at least with the greatest similarity of character. It has thus been justly remarked that this style of ornamentation on painted vases seems to have been borrowed from some other form of manufacture in which the design, owing to the mechanical system of its production, necessarily leads to this redundancy, and to this repetition. This is to be found chiefly in the art of weaving patterns or of basket-work, and it is highly probable that these crafts had their influence upon the decorative feeling of the Dipylon vase-painter.



Fig. 26. — Argive (Proto-Corinthian) Vase, Linear style.
From the Heraeum.

The important point upon which I wish to insist is that the geometric feeling as expressed in regular and symmetrical lines, whether straight or curved, irrespective of any imitation of objects in nature or of any meaning beyond the direct appeal to the aesthetic sense of vision as such, was always present as a prominent element in the decoration of Mycenaean vases, and that at the earlier stages it was predominant, because these earlier stages were the direct and natural development of the same principle in primitive art.



Fig. 27. — Argive (Proto-Corinthian) Vase, later style.
From the Heraeum.

Among the various groups into which Mycenaean vases have been divided, there is not one in which we could not find vases the decoration of which consists solely of linear or geometrical ornaments. This is especially the case with the Mycenaean vases of smaller size, — in fact, it is generally only in the larger and finer specimens that the more elaborate, naturalistic ornament is introduced. And where this naturalistic ornament is present, we must not forget that it is set off by a series of lines drawn round the vase, the most important part of its general ornament, which is so much like the Argive-Linear, hitherto called Proto-Corinthian decoration, that when we merely find fragments of Mycenaean vases containing these linear ornaments, it is extremely difficult, if not impossible, to decide whether they belong to a vase of the naturalistic Mycenaean class or to the Argive-Linear class. This is still more difficult, if not impossible, in the case of small vases, where we merely have a shape that has been assigned to them as distinctly Mycenaean, but which does not seem to me to justify us in classing them as Mycenaean instead of our advanced Argive-Linear (Proto-Corinthian).

[1] I sincerely hope that the term "Dipylon," which in its connotation of locality corresponds to the term "Mycenaean," will be henceforth used instead of "Geometric."

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The important point upon which I wish to insist is that the geometric feeling as expressed in regular and symmetrical lines, whether straight or curved, irrespective of any imitation of objects in nature or of any meaning beyond the direct appeal to the aesthetic sense of vision as such, was always present as a prominent element in the decoration of Mycenaean vases, and that at the earlier stages it was predominant, because these earlier stages were the direct and natural development of the same principle in primitive art.



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But it may be urged that these smaller Mycenaean vases containing linear ornaments like that of the Argive-Linear class belong to a late and degenerate period, when Mycenaean naturalism was dying out, and having passed into the stage of growing conventionalization, left the field open to pure geometric design. To this I answer that the pure linear geometric feeling is present, and runs side by side with the most complete naturalism on the best specimens of all classes of Mycenaean vases, that, as we shall see, the earliest dull-colored class is purely linear, and that instances of undoubtedly Mycenaean ware can be found in which linear ornamentation is demonstrably earlier than naturalistic ornamentation found on the same site. I will here give a most striking and conclusive instance of such evidence furnished by the actual conditions of excavations. Tsountas[1] discovered a most important tomb at Mycenae, in which, besides numerous other objects of distinctly Mycenaean ware, were vases that are decidedly not of the latest period of Mycenaean vase-painting. The end of the *dromos*, at the entrance to the tomb proper, was blocked up, as is frequently the case, by stones, among which was made the happy discovery of a stone bearing a painted procession of warriors (Fig. 28) corresponding to those that were already known from Mycenaean vase-paintings. But this discovery is still more important from the fact that below the stucco which had been applied to the surface of the stone to prepare it for the painter, in the upper portion, where this is chipped away, are the remains of earlier carved decoration, and this decoration, corresponding to that of several Argive-Linear plates and vases which we have found, consists of simple straight lines connected with circles, — a purely linear and geometrical ornamentation. Now there can be no doubt that the painted stone, which was thus used with other materials at hand to stop up the entrance to the tomb, and so must have been lying about useless for some time (there is no sign of its having formed an integral part of the decoration of the tomb), must have been considerably earlier than the objects in the tomb itself. The structure which it embellished had long gone out of use. But when this stone, embellished by geometrical ornaments, was covered with stucco upon which figures were painted, it had again completely lost its original use to make it thus available as raw material for the painter. This again implies a considerable interval. Evidently, therefore, the *linear* ornament on the stone antedates the Mycenaean painting upon it, and by a still greater period the Mycenaean vases in the tomb.[2]

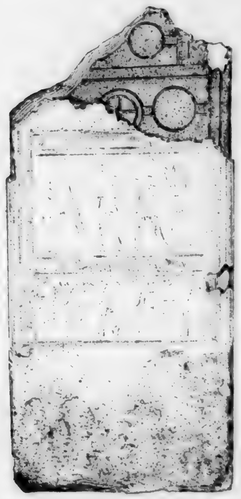


Fig. 28. — Mycenaean Tombstone with carved and painted decoration.
From Tsountas, Ἐφημ. Ἀρχ. 1896.

So far from linear ornament marking a later degeneration of the Mycenaean style, I maintain that that class of ware which has hitherto been considered the earliest stage of

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[2] I would also draw attention to the fact that the stone carvings found at Mycenae (Schliemann, *Mycenae*; Tsountas-Manatt, pp. 91, 119, 120, etc.; Perrot-Chipiez, VI., V.) are either completely geometrical in the case of the architectural carvings, or are subdivided by geometrical decorations, as in the case of the rudely carved tombstones with human and animal figures.

that style, namely, the class with dull-colored paintings, shows throughout nothing but this linear system; while the prevalence of hand-made ware, the ruder material, and the incompleteness in the development of ceramic forms in these vases, urge us to classify them in the Pre-Mycenaean rather than in the distinctly Mycenaean class.

If this system of linear decoration is continuous with the Mycenaean period and can in its purity be traced also in vases that belong to the Dipylon period, so that it always will be difficult to distinguish some specimens of so-called Proto-Corinthian ware from vases that may be ascribed to both these other categories, the Heraeum finds, especially in small vases, show that this system presents an unbroken development from the earliest primitive forms to the latest specimens of perfect ceramic craft. In drawing attention to this development as illustrated by our finds, I will exclude the consideration of the eccentrically shaped primitive vases. For, as has been said above, the impulse which led to the creation of these vases comes from the coroplast rather than from the ceramist. To introduce them into this question at this stage would only confuse matters.



Fig. 29. — Examples of incised Linear Ornament.
From the Heraeum.

The earliest ornamentation of our primitive pottery, as in the primitive ware all over the world,[1] consists not of painted decoration but of incised lines, scratched, pressed, or cut with rude instruments and with uncertain hand, upon the clay of the hand-made pot, generally in its softer stage. I here give a few specimens (Fig. 29) of this ornamentation in what were meant to be straight parallel lines or zigzag or waved ornaments.[2] This rude and uncertain decoration corresponds to the work of the potter who did not use the wheel. We find the same kind of pottery and ornament on all the earliest sites of the ancient world.[3] Linear decoration in the same stage of incipient development is found also in other early crafts, such as in what might be called gem-engraving, of which our

[1] Cf. Flinders-Petrie, *Egyptian Decorative Art*, pp. 9 ff.

[2] See, for instance, for the pottery found in the lowest stratum at Hissarlik (Troy), Schliemann, *Ilios*, pp. 216, 217, 295, 354, 359, etc.; also, p. 563, and Nos. 1817–2000.

[3] The early graves excavated by Dümmler at Amorgos, *Athen. Mitth.* XI. pp. 15 ff., whether "pre-Hellenic" or not, certainly show a preponderance of the geometrical ornamentation in the pottery, where we have not the "coroplastic" eccentricity of the primitive ceramist. Compare also the decorated ware found in tombs of the Neolithic and Bronze periods in Sicily by Orsi (*Quattro Anni de Esplorazioni Sicule nella Provincia di Siracusa*, 1890–93), as well as the painted vases published in that volume, which show striking analogies to our own finds. It is also interesting to study the ornaments of purely geometrical design on the rude objects in prehistoric lake dwellings in the valley of the Po, such as those published by Ströbel and Pigorini (in the *Bullet. di paleontol. Italian.* I., II., III., especially IV. pl. 1, 1). Cf. also Helbig, *Italiker in der Poebene*. The remote antiquity of such forms of ceramic decoration can be appreciated when we study the pottery found in Egypt, such as that of which Messrs. Flinders-Petrie and Quibell tell us that it cannot be later than the 12th dynasty, which brings us to the second half of the third millennium B. C. See Petrie and Quibell, *Nagada and Ballas*, and the other interesting Egyptian discoveries of this able excavator, which bring us, in the case of Tell-el-Amarna, face to face with Mycenaean pottery. Analogies might be found in every centre of prehistoric, nay savage, art all over the world; but I must postpone studying this wider aspect.

But it may be urged that these smaller Mycenaean vases containing linear ornaments like that of the Argive-Linear class belong to a late and degenerate period, when Mycenaean naturalism was dying out, and having passed into the stage of growing conventionalization, left the field open to pure geometric design. To this I answer that the pure linear geometric feeling is present, and runs side by side with the most complete naturalism on the best specimens of all classes of Mycenaean vases, that, as we shall see, the earliest dull-colored class is purely linear, and that instances of undoubtedly Mycenaean ware can be found in which linear ornamentation is demonstrably earlier than naturalistic ornamentation found on the same site. I will here give a most striking and conclusive instance of such evidence furnished by the actual conditions of excavations. Tsountas[1] discovered a most important tomb at Mycenae, in which, besides numerous other objects of distinctly Mycenaean ware, were vases that are decidedly not of the latest period of Mycenaean vase-painting. The end of the *dromos*, at the entrance to the tomb proper, was blocked up, as is frequently the case, by stones, among which was made the happy discovery of a stone bearing a painted procession of warriors (Fig. 28) corresponding to those that were already known from Mycenaean vase-paintings. But this discovery is still more important from the fact that below the stucco which had been applied to the surface of the stone to prepare it for the painter, in the upper portion, where this is chipped away, are the remains of earlier carved decoration, and this decoration, corresponding to that of several Argive-Linear plates and vases which we have found, consists of simple straight lines connected with circles, — a purely linear and geometrical ornamentation. Now there can be no doubt that the painted stone, which was thus used with other materials at hand to stop up the entrance to the tomb, and so must have been lying about useless for some time (there is no sign of its having formed an integral part of the decoration of the tomb), must have been considerably earlier than the objects in the tomb itself. The structure which it embellished had long gone out of use. But when this stone, embellished by geometrical ornaments, was covered with stucco upon which figures were painted, it had again completely lost its original use to make it thus available as raw material for the painter. This again implies a considerable interval. Evidently, therefore, the *linear* ornament on the stone antedates the Mycenaean painting upon it, and by a still greater period the Mycenaean vases in the tomb.[2]



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[1] Cf. Flinders-Petrie, *Egyptian Decorative Art*, pp. 9 ff.

[2] See, for instance, for the pottery found in the lowest stratum at Hissarlik (Troy), Schliemann, *Ilios*, pp. 216, 217, 295, 354, 359, etc.; also, p. 563, and Nos. 1817–2000.

[3] The early graves excavated by Dümmler at Amorgos, *Athen. Mitth.* XI. pp. 15 ff., whether "pre-Hellenic" or not, certainly show a preponderance of the geometrical ornamentation in the pottery, where we have not the "coroplastic" eccentricity of the primitive ceramist. Compare also the decorated ware found in tombs of the Neolithic and Bronze periods in Sicily by Orsi (*Quattro Anni de Esplorazioni Sicule nella Provincia di Siracusa*, 1890–93), as well as the painted vases published in that volume, which show striking analogies to our own finds. It is also interesting to study the ornaments of purely geometrical design on the rude objects in prehistoric lake dwellings in the valley of the Po, such as those published by Ströbel and Pigorini (in the *Bullet. di paleontol. Italian.* I., II., III., especially IV. pl. 1, 1). Cf. also Helbig, *Italiker in der Poebene*. The remote antiquity of such forms of ceramic decoration can be appreciated when we study the pottery found in Egypt, such as that of which Messrs. Flinders-Petrie and Quibell tell us that it cannot be later than the 12th dynasty, which brings us to the second half of the third millennium B. C. See Petrie and Quibell, *Nagada and Ballas*, and the other interesting Egyptian discoveries of this able excavator, which bring us, in the case of Tell-el-Amarna, face to face with Mycenaean pottery. Analogies might be found in every centre of prehistoric, nay savage, art all over the world; but I must postpone studying this wider aspect.

earliest type merely shows a rounded stone with linear scratchings upon it.[1] In early bronze work we see the same general system; only here the earliest form of decoration is produced not so much by scratching or incising as by beating out small bosses.[2]

Artistic skill and feeling for symmetry grew and were aided especially by the introduction of the potter's wheel. For the mechanical process now came in to aid the potter in producing the exactness and regularity which are essential to linear and geometric decoration. And thus the fragments which I have placed below these earliest linear scratchings show the development to which they lead after the potter's wheel is used. For the incising instrument need then be merely held firmly while the clay revolves, and the parallel lines are accurately produced without further effort. The higher standard of decorative workmanship which is thus attained drives the decorating potter to devise means of producing the same exactness in other linear and geometrical forms, whether it be a combination of zigzag lines, waved patterns, circles, or a succession of impressed dots, or even masses of clay applied to the body in straight or wavy lines in relief.

When color is introduced and painted ornamentation is applied to vases, we have the same development as the one I have just noted with reference to incisions. The earliest dull-colored ornaments are, as I have said, linear, and belong to hand-made vases; the geometric design is thus not exact, regular, and symmetrical. With the introduction of the wheel, not only does the form of the vase become more precise and symmetrical in shape, but the painted decoration follows the same lines. I have here chosen from among our finds a series (Fig. 30) of the simplest and earliest forms of vases of which similar specimens have been found in the earliest strata at Hissarlik, and we may say on all ancient sites. It is the simple small shell-like round bowl, with a hole added for suspension in the earliest specimens. The four specimens here placed in the uppermost line are hand-made, the others mark the introduction of the wheel. The one placed first at the left-hand corner is ornamented in the most elementary way by means of incision. Two lines are scratched in the inside of the bowl crossing each other in the middle in the simplest shape of a cross. Besides this, small notches are pressed into the rim. The next marks the step to painted ornamentation, and in this we have one simple line painted across the inside of the bowl; the same in the next; while the fourth has four such lines crossing one another. But these lines are drawn in a rude, uncertain manner — freehand. The specimens below them have the same linear ornamentation. But the potter has wisely desisted from drawing straight lines across, and has given a much more effective and constructive ornamentation of straight lines round the inside of the bowl, thus presenting concentric circles. This was easier for him, because they were drawn by simply holding the brush in the inside while the bowl was turned. The rough notching on the rim of the first rude specimen is reproduced on two fragments of the second line by regularly painted dots of color round the rim. And these elements remain continuous. Now the specimens on the third line would at present be classed as Mycenaean, and they certainly belong to that period chronologically; the rounded

[1] Mr. R. Norton will give a full and systematic account of the interesting series of early engraved stones discovered in our excavations, as well as of the earlier bone and ivory implements.

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fragments among them are identical with the linear ornamentation on most Mycenaean vases. The specimens on the lowest line are also distinctly what is called Proto-Corinthian. But there can be no doubt that these last two lines belong to the same system of ornamentation and are a continuous development out of the system rudely applied in the flat cups at the top.

In all the more fully developed specimens of the form I have just enumerated, glazed color has superseded the earlier dull-colored decoration. The heritage handed on by the vase-painter from the early dull-colored style is the art of freehand drawing which the Mycenaean vase-painter adopts and develops still further in his naturalistic freedom when his imitative instinct directs his eye to nature, and the greater luxury of the life surrounding him leads to more richly decorated vases. But the other element in these dull-colored vase-paintings, the geometrical element, survives, and, following the more exact method suggested by the improved ceramic process in the use of the wheel, surrounds the part between the foot and the belly of the vase and that between the belly and the shoulder with a perfected system of linear ornaments.



Fig. 30. — Examples of painted Linear Ornament.
From the Heraeum.

In the smaller vases this latter process of linear ornamentation prevails, and asserts itself through the Mycenaean and the Dipylon periods down to the latest development of Argive-Linear ware, the so-called Proto-Corinthian vases.

These final specimens of the development of the Argive-Linear vase are always small, and correspond in their essential form and decoration to the earlier specimens of small vases which run through the preceding periods as just enumerated. But these earlier small vases differ from these later ones in that they generally have the manifest characteristic of cheapness stamped upon them, as wares of inferior value and humbler uses. We are thus not astonished to find that the simpler and ruder techniques survive in them. For it must never be forgotten that the humbler forms of indigenous art retain, even in the latest periods, the technique and general characteristics of the earlier art, and this is true not only in ancient Greece, but in all times and countries.[1]

Now the advanced Argive-Linear, the so-called Proto-Corinthian ware, shows the most complete mastery over the potter's technique, and the greatest certainty in the use of the brush on the part of the decorator. Since the maker of the earlier small specimens of Argive-Linear ware was probably incapable of giving to his cheaper small vases the fine brush-work required for further ornamentation which the skilled vase-painter of the Mycenaean period put into the more costly large vases, — this earlier exponent of Argive-Linear technique had to remain content with mere linear decoration. More elaborate

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forms of decorative work are thus absent from the earlier Argive-Linear ware. But in the advanced period this is no longer the case; and, by successive stages, we at last arrive at those most perfect specimens of ceramic art and decoration, unsurpassed by the best work in any period, which culminate in the miniature "Proto-Corinthian Lecythos" presented by Mr. Macmillan to the British Museum,[1] and, next in order, the similar specimen in the Berlin Museum.[2] In these vases (cf. Fig. 26), and in many of the same order preceding them by many years in time, small vases are distinctly considered worthy of the highest ceramic and decorative elaboration.

I venture to suggest the following explanation for this change in the character of such small vases. The elaborateness of the vase follows the use to which it is put. The simpler and humbler this use is, the less elaborate is its artistic form and decoration. I believe that much error would be avoided by archaeologists dealing with vases if this general truth were borne in mind. A sepulchral vase, a prize vase, a gift between lovers, would naturally invite the maker to more beautiful and luxurious decoration than when the object is a rough cooking utensil or the gift of a poor person, who buys, for the smallest coin from the huckster outside the sanctuary walls, the object which she will offer to the divinity.[3] Now, until the end of the Dipylon period these small vases had generally served these humbler purposes — they were the cheaper votive offerings. From this time on they become more expensive ware, probably because they are turned to more costly uses. They now become the receptacles for the precious unguents and perfumes which more luxurious forms of life introduce. These luxurious forms of life were hardly natural and indigenous to the male portion of the Doric population at Argos.

If we examine the large mass of specimens of advanced Argive-Linear or Proto-Corinthian ware found at the Heraeum, we shall see that as they advance in perfection and elaboration they tend to become, in the style of their decoration, more and more oriental in character, and it is in these later stages that they naturally lead over to the orientalizing style of early Corinthian vases. The name Proto-Corinthian has thus some intrinsic justification when applied to this limited category of the Argive-Linear ware. Now I consider it highly probable that the more luxurious habits introduced into the Doric communities at the time when these small local vases were developed in their peculiar later style were introduced from the East. These were chiefly commercial articles, not meant for the male portion of the community, but for the women. The vases which came to be used to hold these oriental unguents and perfumes became *articles de toilette*. But these articles are costly and luxurious, and the vase containing precious material is worthy of most careful treatment at the hands of the ceramist. We occasion-

[1] Cecil Smith, *Journ. Hellen. Stud.* XI. (1890), pp. 167 ff. pls. i., ii.

[2] Berliner Vasensammlung, No. 336.

[3] In illustration of the sliding scale of the value of votive offerings according to the means of the donor, and of the inferiority of terra-cotta idols and pinaces, made by inferior craftsmen, as compared with superior works of art, Mr. Walter Headlam has furnished me with the following interesting passages: —

τωλέκτορος τοῦδ', ὅντιν' οἰκίαι τοίχων
πήρυκα θύω, τἀπίδορπα * δέξασθε·
οὐ γάρ τι πολλὴν οὐδ' ἕτοιμον ἀντλεῦμεν,
ἐπεὶ τάχ' ἂν βοῦν ἢ νεημένην χοῖρον
πωλῇς φορίτης κοὐκ ἀλέκτωρ' ἵητρα

* *Dessert* only: it cannot serve for the meal itself (βρῶσις).

νοῦσων ἐπιτεύμεσθα. τὰς ἀνέψησαι
ἐν' ἠείας οὐ χεῖρας ὁ ἔναξ τείναι.
— ἀε δεξιῆς τὸν πίνακα, Κοκκάλη, στῆσον
τῆς Ὑγιείης.

Herodas, IV. 12–20.

Non ego ture modo aut picta tua templa tabella ornabo, aut puris serta feram manibus;
Corniger haut aries humilis, aut maxima taurus victima sacratos tinguet honore focos.

Vergil, *ad Venerem*, Baehrens' *Poetae Latini Minores*, II. p. 176.

Ὥσπερ ἂν εἴ τις Φειδίαν τοῦ τὸ τῆς Ἀθηνᾶς εἶδος ἐργασάμενον τολμήσῃ καλεῖν παροπλίδιον, ἢ Ζεῦξιν καὶ Παρράσιον τὴν αὐτὴν ἔχειν φαίη τέχνην τοῖς τὰ παιδικὰ γράφουσιν.

Isocrates, *Or.* XV. 2.

ally found specimens of this ware of which the clay was so highly levigated and beautifully worked that, thin as paper, it crumbled in our hands, and could not be preserved. We must therefore not be astonished to find that orientalizing tendencies and decorations are gradually introduced into these vases, as we must remember that some of the most characteristic forms — the aryballos, the alabastron, the pyxis, certain forms of the small oinochoë — existed long before their appearance in Greece in glass, glazed and unglazed pottery of Egyptian and Phoenician origin. These foreign forms, no doubt, also had their influence on the development of the shapes in the local Argive ware of these periods.

This orientalizing phase marks the last stage in the development of the Argive-Linear pottery, which we can trace from the earliest beginnings through the linear and dull-colored painted ware, retaining its vitality especially in the smaller vases, during the Mycenaean and Dipylon periods, but manifestly also influencing the decoration of the larger vases in these times; and then, when these two great and distinct periods have passed and their influence has spent itself, the Argive-Linear form still survives in what has hitherto been called Proto-Corinthian ware, and leads organically, in its orientalizing phase, when it has run its course of many centuries, to the Corinthian ware. Though I insist upon urging the continuity of Argive-Linear pottery through all ages in the history of the Heraeum, I do not mean to imply that we cannot distinguish here and elsewhere a fixed and clearly defined class called Mycenaean, which in the important introduction of glazed color, in the evolution of beautiful ceramic shapes, and in its artistic individuality of decoration, stands out clearly in general historical development. The more we recognize the continuity of the Argive-Linear ware, the more does the Mycenaean period stand out in bold relief as a striking though natural development of some of the elements pre-formed in the more primitive dull-colored ware. So, too, the so-called Dipylon ware is equally characteristic and distinct, though it also exists at the Heraeum side by side with the Argive-Linear ware. The Dipylon ware really marks a more distinct change in its decorative characteristics (in spite of the word "geometrical") than does the Mycenaean ware. For its element of redundant geometrical decoration points, as has been said above, to the introduction of new principles borrowed from some other technique, whereas the Mycenaean, in spite of the marked advance which it represents, is still essentially a development of the principles which underlie the dull-colored primitive decoration.

This ceramic evidence seems to show that we have a continuous indigenous element represented by the Argive-Linear ware, and that the Mycenaean, as well as the Dipylon, periods are laid over, though they cannot extirpate or hide from our view this continuous indigenous layer. They may, and probably did, mark an important political or ethnical change and modification within the Argive district, be it through conquest from without, violent change of dynasty, or peaceful change through marriage and heredity within, the grafting of a new dominant class upon the older population, or, finally, peaceful commercial influences through intercommunication of peoples or exchange or importation of goods. It is beyond the purpose of our work to enter into the problems of ethnology, or to draw the historical conclusions from the archaeological material before us; but we must classify and arrange scientifically the material which good fortune has placed in our hands.

One important conclusion, bearing immediately upon the history of the Heraeum, we are bound to draw from the evidence of ceramic ware which has forced us to insist upon

a new classification of early Greek pottery. This conclusion is the same as that impressed upon us by the Heraeum terra-cottas in confirmation of all the other evidence which we have hitherto examined: — that, long before the Mycenaean period, the potter's craft passed through many stages of development at the Heraeum, and furnishes evidence of a continuous worship on this site for many generations preceding the Mycenaean age, and that this continuity speaks for the unbroken continuance of an early population, subject to changes in its social and political life — but always there.

I must draw attention finally to the complete parallelism furnished by our finds between the series of terra-cottas and the successive phases in the history of the early vases found at the Heraeum. In the vases we have the earliest specimens of primitive Argive-Linear ware with incised ornaments which correspond to our primitive class of Argive terra-cottas. The early Argive-Linear with painted ornamentation and the dull-colored paintings correspond to what I should call terra-cottas of the Tirynthian-Heraeum class. We then have the middle Argive-Linear surviving during the Mycenaean and Dipylon period, corresponding to the terra-cottas which we call Mycenaean-Argive and Geometric-Argive. The advanced Heraeum type of terra-cottas with the human shape would correspond to the advanced Argive-Linear (proto-Corinthian) period, in which certain specimens of terra-cottas show the same technique as in the vases, and form a transition to the following class of archaic terra-cottas. But before we arrive at the archaic terra-cottas, we must introduce here a series of terra-cottas that are distinctly oriental in character, and that would correspond to the orientalizing Argive-Linear period in the vases. We then come, in vases as well as in terra-cottas, to the clearly historical periods in which, through the Corinthian and the early black-figured vases, we are led to the best classical red-figured ware. Of this latter we have a few isolated specimens at the Heraeum, as we also have through the archaic and advanced archaic terra-cottas a few isolated specimens of images belonging to the best classical period. The following table will illustrate the parallelism.

Dates B. C.	Tradition.	Terra-Cottas.	Vases.	Architecture.
Before circ. 2000.	Phoroneus and his house, etc. to Proetus.	Primitive Argive.	Primitive Argive-Linear	Earliest small-stone walls.
Circ. 1800.	Proetus.	Tirynthian Argive.	Early Argive-Linear (dull-colored Mycenaean).	Cyclop. supporting wall at temple.
Circ. 1500.	Perseus.	Middle Heraeum and Mycenaean.	Middle Argive-Linear and Mycenaean.	N. W. Building, graves, etc.
Circ. 1400.	Persidae, Atridae.	Middle Heraeum and Dipylon.	Middle Argive-Linear and Dipylon.	? N. E. Peribolus walls.
Circ. 1000.	Proeles.	Advanced Argive (human shaped).	Advanced Arg.-Lin. (Proto-Corinthian).	Upper Stoa. West Building, Southwest Stoa, Second Temple.
To circ. 700.	Phidon, etc.	Orientalizing.	Orientalizing Argive-Linear (Corinthian).	
Circ. 520.	. . . . .	Archaic Greek.	Black-figured.	
Circ. 460.	. . . . .	Advanced Archaic.	Early red-figured.	
Circ. 421.	. . . . .	Free classical.	Free classical.	

BRONZES.

The bronze and metal ware found at the Heraeum will receive exhaustive treatment at the hands of Mr. De Cou. But in connection with the general history of the Heraeum and with the light which our individual finds throw upon it, I must here point to one most interesting feature of our discoveries which impressed itself upon me from the very earliest stages of our excavation. One of the singular facts in the relative number of objects found is that, with the exception of a few isolated cases in which coins appeared near the surface in our excavation, no coins whatever came to light in any of the strata in which thousands of other objects were found. The natural inference is that in the times to which these finds belong there was no coinage at Argos. This fact is moreover borne out by the general history of coinage in Greece. And (as we are able to furnish a most striking and fortunate illustration of this fact) it is to Phidon of Argos that the introduction of coinage at Aegina and of a system of weights and measures are ascribed. I cannot at this time enter into the vexed question of the exact date when Phidon of Argos lived.[1] Although we found no coins in the lower layers, we did, on the other hand, find innumerable objects in metal, especially bronze, among which a certain simple kind of bronze pin, developed out of the ordinary nail shape into more ornamental and elaborate forms, constantly recurred in all the earlier layers. "*Allo kumbi!*" (another nail) was the constant call of our excavators when another one of these nail-like pins was found. Besides these we were continually coming upon pieces of thinner or thicker bronze wire or rods, which in many cases had knobs at intervals, as if to be used for handles. The thought at once came to us that these were spits. In the same way we came upon iron rods in other layers, and pieces of wire twisted into decorative shapes (for instance, the *Pretzel* shape, ). Finally, in the northeast end of the Second Temple platform we were much astonished to find two huge objects of iron (Fig. 31). The one was greeted by our workmen with the call of "a cannon," for it certainly was of the dimensions and weight of a field-gun. The other, slightly smaller, was a solid mass of iron, a square bar flattened out into a lance-shaped curve, of which the point has been flattened down. The cannon-shaped iron mass was found to consist of innumerable rounded bars of metal coming to a point and held together at either end by an iron coil tightly twisted round them, so that they all presented one mass. If it had belonged to Roman times, one would have called it a huge iron rendering of the lictor's staffs.

Now when, even in the first year, this vast number of bronze spits and pins were found, the thought at once presented itself that these objects were used for their money value in metal; for it is quite impossible to believe that the men and women were constantly shedding the pins which held their garments together on this site, in a manner to produce such a mass of bronze objects as compared with the number of other finds. Nay, I felt convinced that not only these but also the innumerable bronze rings of various sizes and thicknesses — though they may have had some ritual meaning as offerings to Hera from affianced couples — were dedicated and preserved here as objects of metallic value, — and that in the daily life of the people these were used in lieu of ordinary coin. We only need study the primitive currency of other early peoples and of savages[2] to

[1] Holm (*Griech. Gesch.* I. p. 205) gives B. C. 770, Stais (Πρακτικά, 1895, p. 236) 745; while Beloch (*Griech. Gesch.* I. p. 280) puts him into the sixth century. See also Busolt, *Griech. Gesch.* I. pp. 579–625; Ridgeway' *Origin of Currency and Weight Standard*, pp. 210 ff.

[2] Compare Ridegway, *op. cit.* cap. i. Sir John Kirk

see how such metal objects, wire rings and pins and spits, were everywhere used for money. When, finally, the two huge iron objects (Fig. 31), which could not conceivably have served any actual use, were found, the account which ancient authors give of the dedication of the spits[1] (ὀβελίσκοι) at this very Heraeum of Argos, when first Phidon struck money at Aegina, seemed the only explanation of the facts of our finds, which thus, on their side, furnish us with a most striking archaeological confirmation of the statements of ancient historical writers.

The evidence of all the several departments of individual finds, each dealt with by my competent collaborators, tends to confirm my main thesis concerning the earliest history of the Heraeum, and to bear out the chronological classification forced upon me by the general and special topography of the Heraeum, the architectural evidence of the remains, the local traditions of the district, and by a careful study of the terra-cottas and vases.

Mr. De Cou, who for more than four years has devoted himself to the cleaning and most painstaking study of the bronze objects for purposes of final classification, sends me the following brief abstract of the general chronological grouping of the bronzes which he has been led to adopt from his prolonged study of the objects themselves. It will be seen that his classification, arrived at quite independently from those of the other objects, strictly corresponds in the main to these. His caution regarding the bronzes of the primitive period is but natural, as we should expect but few objects of this material at this early stage of civilization. It is also interesting to note that, as in the case of our terra-cottas, the bronzes belonging to the "Geometric" style are comparatively few in number.

The bronzes from the Argive Heraeum he has classified as follows: —

"The objects described in the catalogue are arranged: (1) according to what they are or represent; (2) according to their style; e. g. all the horses or all the birds are kept together, but are arranged in classes and catalogue reference according to their style.

"Evidence for date and style is not furnished by the conditions of the site, except for the *terminus ante quem* 423 B. C. — nor do any of the bronzes appear of themselves to be subsequent to that date. For details one must depend mainly on the excavations of graves in Argolis, Attica, the Cyclades, etc.

"There is no evidence that any of the bronzes from the Heraeum are of other than native manufacture. In the case, however, of the nude female figure with lotus head-dress, reflex Rhodian influence may be suspected.

"The objects may be assigned to a Primitive, a Mycenaean, a Geometric, and an Archaic style and period in rough chronological sequence. Objects which suggest the so-called Oriental style are included with the Archaic.

"*Primitive.* There are no bronze objects from the Heraeum which necessarily must be put here, but it is probable that some of the wire, nails, and chisels, some of the plain rings, and a portion of the single head straight pins (No. 52, etc.) should be put in this period. The same is, perhaps, true of a small suspension vase somewhat resembling the Aegean type with standard and supension holes at the side. Other objects which possibly may be of this period are an oblong plain bead (No. 1547), some of the plain shallow saucers, certain headless corrugated straight pins (e. g. No. 116), and the plain open bracelet (No. 970).

"*Mycenaean.* 1. Shaft-grave period. The Acropolis graves of Mycenae have the following

has also informed me of a similar phenomenon in Zanzibar, where the natives use metal arrow-heads as coin; but have huge, useless and thin arrow-heads over two feet high, as representing larger sums.

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objects which are represented in kind at the Heraeum: Round and diamond-shaped wire, both in straight pieces and coils, nails, spikes and chisels, large plain disks with edge folded under (cf. No. 1713), and the wishbone type of bowl-handles. 2. Of the later period represented by the graves of the lower city and other Mycenaean sites, e. g. Tiryns (in part), Vaphio, Menidhi, Salamis, etc., the Heraeum finds are more numerous, and comprise nails with thick flat heads, plain and ornamented rings, cylix or bowl handles of wishbone type, a small pitcher, shallow saucers with and without handles, disks, etc. Many of the straight pins with bead and corrugated heads, as well as those with spool-heads and inserted bronze or iron pin-shafts (Nos. 352–382), and about fifty fibulae (Nos. 808–857), together with the open screw-thread bracelet with corrugated ends (No. 972), belong here. It is also probable that the simplest form of ball spit is to be put here.

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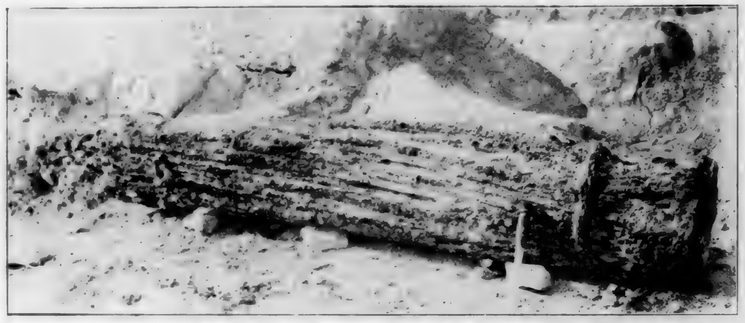


Fig. 31. — Iron Bars excavated at the Heraeum.

tional) and No. 18 (archaic), the birds, the deer (Nos. 19, 20), the fragments of large tripods, the straight pins (Nos. 722–807), the fibulae (Nos. 858–881), the ornamental bands (Nos. 1748, 1749), and probably most of the engraved and punched coatings and the engraved spits. Under the influence of this style stand further the cow's head (No. 23), and the bird's tail (No. 49).

"*Archaic.* 1. Later and reflex Mycenaean (so-called Oriental) influence: cow's head (No. 25), lion (No. 29), fibulae (Nos. 883–918). 2. More independent and developed archaism: fragments of statues (locks of hair), statuettes, horse (No. 18), cows (Nos. 26, 27), mouse (No. 30, frag. No. 31), bird's head (No. 50), mirrors, saucers, sphinx amphora, fragment of rim with lotus and palmettes, low tripod stand, hand strainer, handle with engraved horses' heads, fragment of chariot antyx, imitation harness straps, ring-fibulae (Nos. 919–945), lion fibula (No. 946), cut figures (e. g. dolphin, head and neck of bird). A considerable number of the straight pins also belong here.

"The Geometric style, while interposed between the Mycenaean and Archaic styles, is represented by a smaller number of objects than either, and has left but few traces of its influence on the later style. As a result of the slight impression made by the Geometric style on the Mycenaean, the latter, through its later stages, passes either directly or with slight modification into the early Archaic. Between the two there is, as may be seen, for example, from the various types of straight pins, no essential change in technique, the difference lying mainly in the introduction of some elements of ornamentation derived from the Geometric style and some subjects like the griffin derived from the Orient. An Oriental *style* does not exist among the bronzes from the Heraeum."

see how such metal objects, wire rings and pins and spits, were everywhere used for money. When, finally, the two huge iron objects (Fig. 31), which could not conceivably have served any actual use, were found, the account which ancient authors give of the dedication of the spits[1] (ὀβελίσκοι) at this very Heraeum of Argos, when first Phidon struck money at Aegina, seemed the only explanation of the facts of our finds, which thus, on their side, furnish us with a most striking archaeological confirmation of the statements of ancient historical writers.

The evidence of all the several departments of individual finds, each dealt with by my competent collaborators, tends to confirm my main thesis concerning the earliest history of the Heraeum, and to bear out the chronological classification forced upon me by the general and special topography of the Heraeum, the architectural evidence of the remains, the local traditions of the district, and by a careful study of the terra-cottas and vases.

Mr. De Cou, who for more than four years has devoted himself to the cleaning and most painstaking study of the bronze objects for purposes of final classification, sends me the following brief abstract of the general chronological grouping of the bronzes which he has been led to adopt from his prolonged study of the objects themselves. It will be seen that his classification, arrived at quite independently from those of the other objects, strictly corresponds in the main to these. His caution regarding the bronzes of the primitive period is but natural, as we should expect but few objects of this material at this early stage of civilization. It is also interesting to note that, as in the case of our terra-cottas, the bronzes belonging to the "Geometric" style are comparatively few in number.

The bronzes from the Argive Heraeum he has classified as follows: —

"The objects described in the catalogue are arranged: (1) according to what they are or represent; (2) according to their style; e. g. all the horses or all the birds are kept together, but are arranged in classes and catalogue reference according to their style.

"Evidence for date and style is not furnished by the conditions of the site, except for the *terminus ante quem* 423 B. C. — nor do any of the bronzes appear of themselves to be subsequent to that date. For details one must depend mainly on the excavations of graves in Argolis, Attica, the Cyclades, etc.

"There is no evidence that any of the bronzes from the Heraeum are of other than native manufacture. In the case, however, of the nude female figure with lotus head-dress, reflex Rhodian influence may be suspected.

"The objects may be assigned to a Primitive, a Mycenaean, a Geometric, and an Archaic style and period in rough chronological sequence. Objects which suggest the so-called Oriental style are included with the Archaic.

"*Primitive.* There are no bronze objects from the Heraeum which necessarily must be put here, but it is probable that some of the wire, nails, and chisels, some of the plain rings, and a portion of the single head straight pins (No. 52, etc.) should be put in this period. The same is, perhaps, true of a small suspension vase somewhat resembling the Aegean type with standard and supension holes at the side. Other objects which possibly may be of this period are an oblong plain head (No. 1547), some of the plain shallow saucers, certain headless corrugated straight pins (e. g. No. 116), and the plain open bracelet (No. 970).

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ENGRAVED STONES.

Mr. Richard Norton has had charge of the engraved stones from our excavations, and will give a separate account of these. But I may say at this place that his classification fully bears out the general conclusions concerning the Heraeum antiquities to which I have been led by the study of the other finds on our site.

EGYPTIAN OBJECTS.

In the important chronological conclusions to which we have been led by the study of the antiquities found at the Heraeum, the Egyptian objects were left unnoticed, because I did not feel qualified to judge of them. But it appeared to me when the excavations were completed that these could throw no light upon the earliest history of that site. No Egyptian object was found below the black layer of the Old Temple, and, as far as I could ascertain from the actual finds, none came from the lowest layers near the bedrock on any of the other sites. Those that were found would thus most probably be related to the later "orientalizing" period, as we noted it in terra-cottas, vases, etc.

Mr. A. M. Lythgoe has undertaken the publication of these objects and will further make a comparative study of those found at the Heraeum with those discovered at Eleusis and Aegina. Meanwhile he assures me "that there is no object earlier than the beginning of the so-called Late New Empire — in fact, probably not earlier than the reign of Amasis, Twenty-sixth Dynasty. That dating would include also the scarabs bearing the cartouche of Ramen-cheper."

HISTORY OF PREVIOUS EXCAVATIONS.

The site of the Heraeum remained unknown for many centuries. Its discovery and final identification by means of excavation were achieved in our age by Colonel (later General) Gordon of Cairness in the year 1831. The first notice of this discovery was published by William Mure in 1842.[1] He gives the following account of the discovery and of the site: —

"It was not until my arrival at Athens that I learned that the site of the Heraeum, or temple of Juno Argive, perhaps the most important sanctuary of ancient Greece, after those of Olympia and Delphi, and hence so long, so anxiously, and so vainly sought for by travelers, had been discovered by General Gordon, several years before.[2] . . . The form of this eminence, of which the accompanying sketch (Fig. 32), without any pretensions to geometrical accuracy, will give a fair general idea, is nearly that of an isosceles triangle with its apex pointing to the mountain and its base to the plain. The surface is divided into three esplanades, or terraces, rising in gradation one above another, from the lower to the upper extremity. The central one of the three [our Old Temple] is supported by a massive Cyclopean substructure, still in good preservation, to a considerable height, and a conspicuous object from some distance. It was this wall, accordingly, which first attracted the general's attention. On the lowest of the three terraces he made an excavation,

[1] *Journal of a Tour in Greece and the Ionian Islands*, London, 1842, pp. 177 ff. He made his journey in 1838.

[2] This General Gordon he mentions in an earlier passage (p. 162): "Argos was at this time the headquarters of my countryman, General Gordon, who commanded in chief in the Peloponnesus. His arrival from Athens had preceded mine by several days, and a general invitation to his table, during the period of my stay, assured me both agreeable society and excellent fare during my return from my daily rambles. The general, in addition to his extensive knowledge of the country and people, is an accomplished antiquary; and his long residence in this district had rendered him more especially familiar with its objects of interest."

which fully confirmed his previous suspicion that this was the site of the Heraeum. Besides many fragments of ornamental masonry, both in stone and marble, he disinterred various pieces of sculpture. Among these was the tail of a peacock in white marble, possibly a fragment of that which Pausanias describes as dedicated by Hadrian to the goddess,[1] with several small votive images, some of them bearing distinct allusions to her worship; besides lamps, vases, and other articles in bronze and terra-cotta. Among fragments of columns are none which could be considered worthy of having belonged to the porticos of so noble an edifice. The greater part of the edifice, it may be presumed, has been removed during the later ages, for the construction of modern edifices, sacred or profane. Around the mouths of wells on the plain below, and on the sites of several ruins of Byzantine or Turkish periods, are strewed massive drums of columns of the Doric order, with fragments of a similar description. The lower terrace has also its substructions of regular Hellenic masonry,[2] forming a breastwork to the base of the triangle towards the plain. The excavation was conducted at the general's own cost, and upon a limited scale; but, to judge by its success, were it to be followed up on a more extended plan, it could not fail to be productive of valuable results.

"The length of the surface of the hill may be about two hundred and fifty yards; its present breadth about half its length. It is protected on its flanks by steep precipices beneath which is the bed of a small torrent descending from the mountain behind, as indicated by Pausanias," etc.

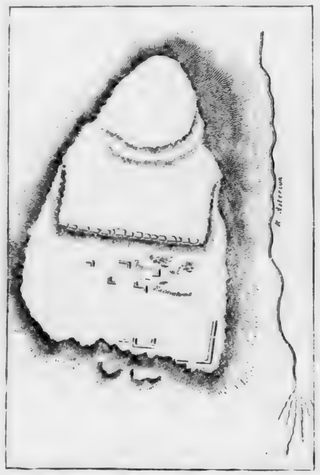


Fig. 32. — Colonel Mure's Plan of the Site of the Heraeum.
From his *Journal of A Tour in Greece*, vol. I. p. 179.

In communicating this discovery of General Gordon's to Colonel Leake, Mr. Finlay says:[3] "It is a few hundred yards nearer the hills than where you passed, but two ravines isolate the site, and prevent it from being reached by riding close along the slope of the hills." On November 21, 1831, Finlay further writes to Leake: —

"While at Nauplia I visited the Heraeum, and spent the whole day there; and I had the good fortune to discover a curious subterraneous passage,[4] which escaped the attention even of Professor Thiersch of Munich, who had visited the site several times. A projection of Mount Euboea lengthens the road from Mycenae to these ruins, and obliges a horseman to keep so far down in the plains, that a small knoll hides the place from those who pass near it, while it remains visible at a distance, and can be seen both from Argos and Nauplia.[5] The eminence on which the ruins are situated is an irregular triangular platform having a precipitous apex towards Mount Euboea, and inaccessible though not very elevated. The base of the triangle is towards Argos, and is sup-

[1] This is a mistake, as Hadrian's gift was "a peacock of gold and shining stones" (Paus. III. 17. 6). Still the allusion to Hera remains, as there were also sacred peacocks in the sanctuary of Hera at Samos, etc. Cf. Frazer's *Pausanias*, Vol. III. pp. 185 ff.

[2] Gordon must therefore, in his excavations, have got down to the foundation walls of the Second Temple.

[3] Leake's *Peloponnesiaca* [supplement to his *Travels in the Morea*], published in 1846, pp. 258 ff.

[4] This is either a broad cavernous passage or the slope behind the buildings, to the northwest of the Old Temple, or a passage near the river to the southwest of the site immediately beside the "manhole" passage which we excavated in the first year. I do not think this one is meant.

[5] Leake's footnote: "From the Larissa of Argos it bears N. 27 E. from Palamidhi, N. 10 W."

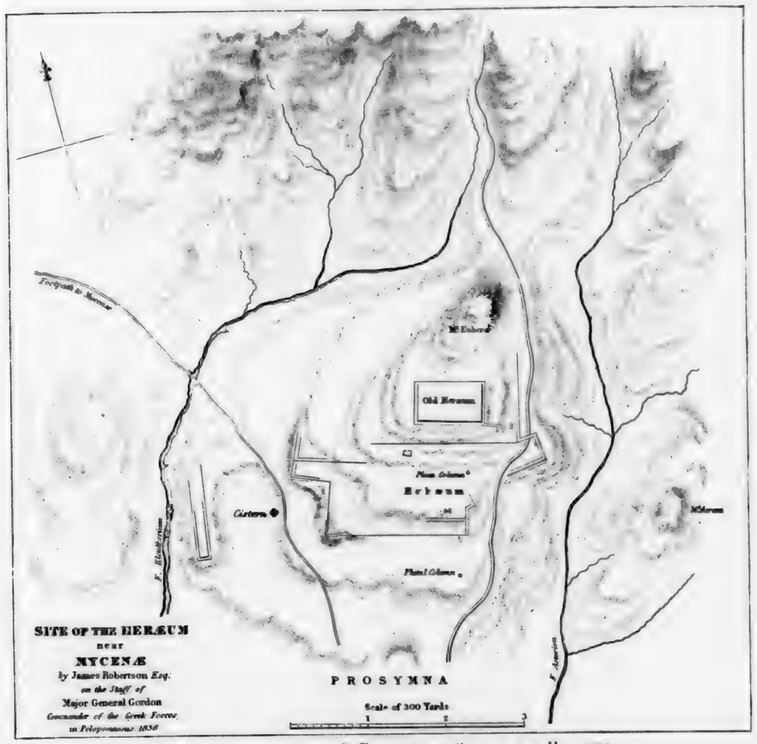


FIG. 33. — GENERAL GORDON'S PLAN OF THE SITE OF THE HERAEUM.
From Leake's *Peloponnesiaca*, 1846.

ported by a terrace in masonry, above which, at the base of the peak, is an upper terrace and a quadrangular platform. The walls of the lower terrace are generally of an inferior kind of regular masonry; but an angle towards Nauplia [probably XI on the Plan (Fig. 2), and the wall to the east of this] is of fine workmanship, and differs from all the remaining walls, in consisting of two layers of large blocks, succeeded by a narrower course. The whole of this wall is pierced with square holes, like those made for beams, very numerous, and extending over the whole surface. Below this terrace I found part of the shaft of a Doric column, eleven feet six inches in circumference, with twenty flutings. This column was of limestone, and covered with cement. The wall of the upper terrace consists of blocks, heaped rudely together in a very rough Cyclopean style; three layers of stone generally remain. One stone of a triangular form was twelve feet in the sides, and four to five feet thick; another eighteen feet long and six feet thick; the breadth was concealed by the earth. Below this terrace is another piece of a column, which seems not to have belonged to the same edifice of which that before mentioned formed a part, being of a harder limestone, roughly worked, unfluted, and 4 feet 1 inch in diameter at the only end I could measure.[1] There are considerable quantities of pottery scattered about."

[1] From the Old Temple.

After describing his search of the watercourses and his discovery of the aqueduct at the back of the Old Temple, Finlay ends his letter. But Leake mentions a second communication from Finlay in the spring of 1836 after he had spent a few days at Argos with General Gordon, who undertook a small excavation at the ruins.[1] He also mentions the peacock, the terra-cotta antefix, "a lion of bronze about six inches long, well preserved, some other bronzes much corroded, and some terra-cotta very rude." Soon afterwards Finlay sent Leake a plan of the site, which Leake published in his volume, and which is here reproduced (Fig. 33). It is of especial interest to us as showing the extent of Gordon's excavations on the Second Temple platform.

In the year 1853 the late archaeologist, poet, and statesman, A. Rizo Rangabé, made a great effort to collect money from all quarters of the civilized world for the purpose of excavating Olympia. His attempt was not successful, for the whole sum raised fell short of $200 (£39, 7s.), and it was evidently quite impossible to undertake with this sum an excavation which, from the manifest indications on the surface, would necessarily assume

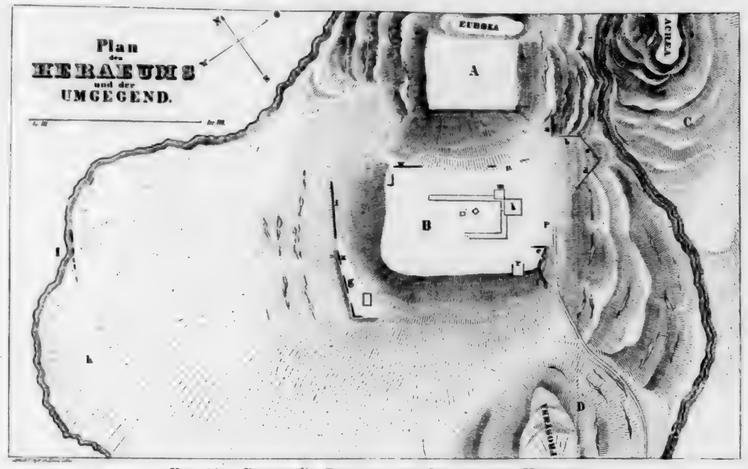


FIG. 34. — RANGABÉ'S PLAN OF THE SITE OF THE HERAEUM.
From his *Ausgrabung beim Tempel der Hera unweit Argos*, 1855.

huge dimensions. Thus Rangabé, who was joined by the German scholar Bursian, decided to begin at what was evidently a much smaller site, but one which seemed second in importance only to Olympia, — namely, the Argive Heraeum. These excavations were thus begun in 1854. As was to be expected from the restricted means at the disposal of these excavators, the work could not be carried very far, and, as is evident from Rangabé's plan here reproduced (Fig. 34), as well as from the account given by both Rangabé[2] and Bursian,[3] was superficial. In fact, their work of excavation consisted in digging trenches along the northern side of the Second Temple foundations,

[1] Gordon's excavation must therefore have been made in 1836, his discovery of the site in 1831.

[2] A. Rizo Rangabé, *Ausgrabung beim Tempel der Hera unweit Argos*, Halle, 1855.

[3] *Bulletini dell. Inst. di Corresp. Arch.* 1854, pp. xi–xvii.

round the east side, and, for a short distance, along the eastern portion of the south foundation wall (Fig. 35). In our own excavation we could trace the work done by Rangabé and Bursian, but found that their trenches were not carried beyond a few feet in depth. In spite of the slightness of the work, a considerable number of interesting marble fragments from the Second Temple were discovered, one head and torso which we shall reproduce in dealing with the sculptures of the temple. We should not be justified in expecting in those infant days of excavating a proper appreciation of all the minor finds and fragments, their careful preservation and classification. There is thus no record in the accounts given by Bursian and Rangabé of the numerous objects of minor art which they found. The individual objects coming from this excavation were deposited in a house at Argos, where, a few years later, in 1857, they were seen by the Cambridge scholar W. G. Clark,[1] who expressed his disappointment at the results (see below, p. 70).

Rangabé's excavations, we have seen, only consisted of a shallow trench along the outside of the foundation wall of the Second Temple; and as soon as he came to the level of this (about a foot from the surface), he went to no further depth. He thus mistook the top of this foundation wall for the pavement of the temple,[2] and carried his work no further into the interior of the temple.[3] But even on the surface of this wall he went to no further depth, and thus was led to believe that the "pavement" ended where the upper layers of the foundation had been removed. It is owing to this fact that on his plan he reaches only one half of the southern wall; while at this point we found it contained two layers of stone beneath, and followed it down at the southwest corner to a depth of twelve feet. He thus also shows nothing of the west side of the foundation wall, and has to make a guess as to its position.[4] We thus find his work at the Second Temple to have consisted only in digging a trench to a depth of not more than two to three feet, and a width of not more than five feet, from the north side, round the east, and half way down the south side. The blocks of *poros* stone (M and K on his map) projecting from the northeast corner of the temple he conceived to have been pavements of altars (*Fussboden von Altären*) and parts of the temple, and makes a conjecture that the larger of the two (K) held the silver altar mentioned by Pausanias.

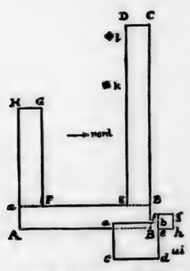


Fig. 35. — Bursian's Plan.

Beyond this work at the Second Temple the excavations of Rangabé were hardly carried, though trenches were dug at various points, without leading him to believe that traces of other buildings existed. They were merely undertaken for completeness' sake, at least to make sure that nothing was to be found there.[5] We must deeply regret that we do not hear more about the trench dug at the southeast corner of the platform and below it (outside the supporting wall), where he seems to have struck one of the earliest layers. For here they "came upon a spot close to the entrance, where there were a few isolated graves. They appeared to have been made of porous stone, so that the sides of these shaft-tombs crumbled away on the spot, and were dissolved into a yellowish earth, in which were found several vases, most of them undecorated, of common workmanship and form."[1] Manifestly these (in continuation of the region outside the earliest *peribolus*-wall) were small, rude shaft-tombs of the Salaminian order, such as we found at the south slope, and in which were the early vases with "dull-colored" ornament. Here, or near it, he came also upon the early vases, figurines, bronze pins (*Nägel*), etc., which made up our black layer.

All in all, Rangabé appears to have found 552 separate objects. Bursian[2] tells us of 550 "architectural and glyptic objects." But he is evidently inaccurate, as Rangabé gives a classified list of the various objects found, adding "numerous vase-fragments, pieces of iron, and of bronze."

The most important objects found were no doubt the fragments of marble sculpture, of which (evidently counting even the smallest chip) he counts 375. Among these are 114 fragments of legs and feet and 160 fragments of drapery. Not all of these have been preserved. The only complete piece he refers to is the female metope head here embodied among ours (Plate XXXII.). "None of them," he says,[3] "is complete, and as they are of different dimensions, some life-size, some colossal, and others, again, and these form the greater number, under life-size, it is impossible to determine whether, or if so, which belong to single statues (perhaps to those of the priestesses), and which to pedimental figures or other ornaments of the temple." They were chiefly found at the *pronaos* and the northern side, where he excavated.[4]

The evidence of our own excavations and, in the light of these, the account which Rangabé and Bursian themselves give show that their excavation does not deserve this name in the full and modern acceptation of that term. I do not say this in a spirit which ignores the high-minded enthusiasm of these scholars, who labored under the great difficulties of such restricted means at that imperfect stage of the "art" of excavating. But it is for truth's sake necessary to say that the work of 1854 consisted in mere scratching of the surface and digging of a few trial trenches. The fact of their being hitherto quoted as "excavations of the Heraeum" led many, ourselves included, to assume that nothing more was to be found; and it was only when we were brought face to face with the actual site, and were impressed with the promise of the soil as it appeared on the surface and the few indications of walls, that Mr. Brownson and I agreed in 1891 as to the desirability — nay, necessity — of completing the work of Rangabé.

I should, in fine, like to quote the remarks of a Cambridge scholar, W. G. Clark, whose work was published in 1858,[5] but who visited the site in 1854 while Rangabé was excavating, and I shall give the passage relating to the Heraeum more fully, as his remarks in general, and especially those on "Prosymna," seem to me so cogent and interesting.

[1] His account is given in his *Peloponnesus*, pp. 83 ff., published in London, 1858.

[2] *Ausgrabung*, etc. p. 13, "Dieser Streif scheint der Fussboden des Peristyls zu sein."

[3] *Op. cit.* p. 14, "Von der inneren Fläche des Tempels ist nichts mehr vorhanden;" p. 18, "Ueber die innere Einrichtung und den inneren Schmuck des Tempels sind alle Vermuthungen schwer."

[4] *Op. cit.* p. 14, "Es ist aber unter den vorhandenen Verhältnissen ebenso schwierig zu sagen, welche die genaue Form des Tempels war als auch zu wissen, ob die vierte [western] Seite nicht, aus irgend einem unbekannten Grunde, weit entfernt von den zwei langen lag."

[5] *Op. cit.* pp. 19, 20, "Die Ausgrabung wäre nicht vollständig, wenn ausser der eigentlichen Tempelstätte, auf der diese Resultate gewonnen wurden, man nicht auch andere von den umliegenden Stätten untersucht hätte, um wenigstens zur Gewissheit zu gelangen dass dort nichts zu erbeuten sei."

[1] *Op. cit.* p. 20, "Einer von diesen Gräben führte zu einer Stelle hart am Eingang, wo einige isolirte Gräber waren. Sie scheinen aus porösem Stein bestanden zu haben, so dass ihre Seiten auf der Stelle verfault, sich in eine gelbliche Erde aufgelöst haben, worin sich einige Vasen, die meisten unverziert, von gewöhnlicher Arbeit und Form vorgefunden haben."

[2] *Bulletini dell. Inst. di Corresp. Arch.* Rome, 1854, p. xvi, "Tutti questi oggetti con tutti i rimasugli architettonici e glittici (essendo questi ultimi 550, . . . etc.)."

[3] *Ausgrabung*, etc., p. 23.

[4] *Op. cit.* pp. 18 and 19.

[5] *Peloponnesus*, London, 1858, pp. 83 ff.

"The ancient Heraeum was a fortress as well as a city. The position combining natural strength with a copious water-supply so far resembles that of Mycenae, but differs from it inasmuch as it stands out on a projecting spur, instead of nestling in a recess of the mountain chain. . . .

"Recent excavations — still in progress when we were there — have laid bare parts of the foundations of the temple, so as to leave no doubt as to its exact site, but bringing nothing to light by which the dimensions could be estimated with anything like certainty. The complete disappearance of the building at so great a distance from any town seems to prove that its materials were convertible into lime. If it had been built of marble, Pausanias would probably have said so; moreover, in another place (VIII. 41) he says that no temple in the Peloponnese, except that of Tegea, surpassed in beauty of material that at Bassae, which we know from its remains to have been built of limestone. The Heraeum was therefore, in all probability, of limestone too, always excepting the decorative sculpture in the frieze and pediments. Immediately in front were a flight of steps, and perhaps propylaea, fronting the road to Argos, and from which a path led to the right to a lower terrace, intended probably for the abode of the servants of the temple. . . . Immediately above the site of the temple just described is a polygonal wall supporting the highest terrace of all; on which, no doubt, the more ancient temple stood, though not a vestige now remains. Some religious scruple seems to have prevented the Argives from meddling with the relics of the first temple. It was originally built on the lonely hill, perhaps as a common holy place for all the inhabitants of the Argive plain, and a peculiar sanctity attached to it on account of its immemorial antiquity The Argives, and probably the other communities, so long as they retained their independence, dated the public acts according to the year of the priestess of Hera. Thucydides, evidently expecting that his work would be known and read in the Peloponnese, gives the date of the commencement of the war, according to the Argive calendar, "when Chryseis was in the forty-eighth year of the priesthood" (Thuc. II. 2). The accident to the temple occurred eight years and a half afterwards (IV. 133).

"The excavations undertaken by the government had been much talked of, and their results vaunted even in the English papers. We were very much disappointed with what we saw collected at Argos. Some shelves in a little room contained the whole — a few small fragments. There was one beautiful female head with the hair in a band gathered in a knot behind, and also some feet and hands of marble. There was a fragment of a frieze with the honeysuckle ornament painted pale yellow on a black ground, with red in the centre. There was a lion's head with open mouth, which must have been a gargoyle, and a piece of moulding of which the ornament represented a buckle and tongue. I do not know the architectural name [egg and dart]. . . .

"All the district comprehended under these three names was probably destined for the support of the temple and its ministers. . . . I find, from another passage in the same writer (Paus. II. 37. 1), that Prosymna was one of the titles under which Demeter was worshiped by the Argives. I conclude, therefore, that it was some provincial name for arable land, as the lowest part of the mountain is. There is perhaps no trade or art, besides agriculture, which so abounds in local and provincial terms not generally understood. Farmers and laborers travel less out of their own neighborhood and their own class than any other people."

From 1854 to 1892 no attempts were made to explore this important site. During these thirty-eight years, time had done its work, and had obliterated all traces of previous excavations. No doubt the inhabitants of the neighboring villages had continued the practice of previous centuries (a practice we found it difficult to prevent even during our excavations) of carrying off portable stones for building material.

EXCAVATIONS BY THE AMERICAN SCHOOL AT ATHENS.

In 1891 I wrote to the Managing Committee of the School of Athens as follows: —

"I have succeeded in obtaining from the Greek government a concession (which will have to be confirmed by the Chamber) of the right to excavate for seven years on two sites to be chosen by



Fig. 36. — The Second Temple Platform before Excavation.

me out of five which I suggested. In order to decide upon this choice, I left Athens on April 1, accompanied by Mr. Brownson, and examined the site of the Heraeum of Argos and Argos itself, Tegea, Sparta, Messene, and Elis. I was told of difficulties which might arise in the expropriation of private property at Sparta, but I have convinced myself on the spot that these will not be serious; while, on the other hand, from the nature of the soil, as well as from the indications of what has already been found there, I am bound to consider Sparta one of the most hopeful sites in Greece. With regard to the other sites, the difficulty lies in choosing between Messene and Elis. Elis is *a priori* the most promising, but Messene seems from the configuration of the soil to be preferable. Near the village of Mavromati, within the city walls, it appears that the ancient Agora is well covered with a thick layer of soil washed down by the stream from the hill of Ithome. Elis also looks well, but bears traces of frequent devastation. On the whole I find it difficult to decide between these two sites, one of which, certainly, we should choose. If I should ultimately succeed in gaining the concession, I propose to begin early next season to dig at Eretria and at the Heraeum of Argos, where the excavations of Bursian and Rangabé, many years ago, certainly require completion. Later in the season, Sparta should be tried, and either Messene or Elis." [1]

In 1892, after the work was fairly begun at the Heraeum, I began explorative excavations at Sparta, assisted by Mr. Meader, the results of which have since been published.[2]

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end of the Lower Stoa. The rude square turret-shaped wall at the southeast end of the second platform was so clearly manifest that, after digging in the interior of this square tower, I at once erected a *Phylakeion* (XI on the Plan) over this to contain our tools and give some shelter against the sun during our midday recess. This was the only spot where I could predict that no further excavations would be needed. From the report to the committee quoted above, it will be seen that I did not expect to find so large a site and so many buildings. The fact that previous "excavations" had been conducted, and the reference of Pausanias to only one building, the Second Temple, and to the burnt ruins of another, the older temple, naturally led me to suppose that we had only to clear away the surface of the temple, to explore the Old Temple platform, and to make out the meaning of the isolated walls to the southwest, in order to complete our excavation of the site and to supplement the imperfect work done in previous years.

Instead of this we have found nine separate buildings, each of considerable dimensions



Fig. 37. — Site of the Old Temple Platform before Excavation.

and importance, and remains of several other structures and walls. Moreover, the work done at the two temples could only be termed "scratching" the surface, and the system of going to the lowest depths, to bed-rock, on these sites has been proved by our finds to be one of the first principles of excavation.

When we began our work, in 1892, there were no indications of ancient remains beyond those mentioned above. The Second Temple platform (Fig. 36) was nothing but a rough, stony, ploughed field, and the upper terrace as well as all the other parts of the sanctuary presented the same aspect (Fig. 37).

I have given a fuller account of our first year's work in a separate publication.[1] Dr. Brownson has also written special papers on the results of that year's digging in the *American Journal of Archaeology* (Vol. VIII. [1893], pp. 205 ff.). Mr. Fox's excellent plans of the excavations in that year will be found in the *Twelfth Annual Report* of the School. These papers and works have been reprinted in the *Papers of the American School at Athens*, Vol. VI. But in attempting to give a short history of the excavations themselves during our four successive campaigns, I will here quote from my Reports to the Committee of the American School, written towards the close of the excavations in 1892, and of each succeeding year.

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"On February 13 I started for Argos, accompanied by Mr. Brownson and Mr. Fox. Before we began active work we were joined by Mr. De Cou and Dr. Newhall. On March 4 Professor Poland also joined us, and took charge of the work for a week, during which time I accompanied Mr. Washington to Phlius, and then returned to Athens. To the hearty coöperation of all these gentlemen the success of our work is largely due.

"We began our work at the Heraeum in an explorative manner, to test the nature of the several sites there grouped. At first we employed sixty-three men and three carts, and rose to one hundred and eighty men and twenty-six carts. We were exceptionally favored by good weather; in the first month we lost only one half-day from bad weather. Our chief energies were concentrated on the Second Temple (Fig. 38); but we dug trenches also on the site of the earlier temple, where



Fig. 38. — The Second Temple at the Close of the Season of 1892.

we came upon its pavement, consisting of flat polygonal stones, and also upon a continuous layer of charred wood, — an interesting confirmation of the record of the burning of the temple. We found ruins of what may prove to be early Greek baths, and of a stoa. At a depth of between ten and fifteen feet, on the slope at the west end of the Second Temple, we came upon a curious layer of black earth, in which we found a great number of archaic bronze objects, amber beads, some gold and silver rings, terra-cotta ornaments, fragments of early vases, bone needles, stone seals, etc. The terra-cotta plaques are almost unique in character, while the vases make a valuable addition to our knowledge of early ornamental ceramic art.

"We were fortunate enough to find a large number of the marble sculptured ornaments of the Second Temple in a more or less fragmentary condition. . . . We were still more fortunate in discovering two well-preserved heads, about two thirds life-size, which belonged to the metopes, and also a well-preserved male torso from one of the metopes. Finally, immediately in front of the west end of the temple, we had the great fortune of finding the marble head of Hera, of which you have already heard. This head, of at least life-size, is recognized by all who have seen it as the best preserved specimen of a female head from the fifth century B. C." . . .

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CAMPAIGN OF 1893.

"In our second campaign, in 1893, I was assisted by Messrs. Lythgoe, Meader, and Norton, who took part in the excavation from the beginning to the end, and had each charge of definite portions of the site as responsible overseers and directors of the workmen under their command. These gentlemen, with Dr. Washington, remained on the site, and continued the excavations for several days after I was forced to leave, and during these days some of the most interesting objects of sculpture were found. . . .

"We pitched our camp on the rocky elevation above the Older Temple on March 30, the Greek government having kindly lent us three good tents from their army stores. The experiment of camping on the site itself has proved a great success, and one which it would be well to adopt in the future. We at once engaged workmen, and were enabled to start the next day with 112 men and 23 carts. On April 1, we had 130 men and 30 carts; on April 3, 200 men and 38 carts. Our force at last reached the number of 240 men. We began to excavate on the upper plateau, the site of the Older Temple. . . . We cleared off all the top soil down to the early substructure, about 45 metres in length by 35 metres in breadth. The burnt layer alluded to in my report of last year again appeared on various portions of this site, together with masses of *poros* stone, which had evidently been split into smaller pieces by the heat of a great conflagration. We were fortunate enough to find still standing on this terrace a portion of the early wall, about 14.30 metres in length by a little over a metre in width, which certainly must have belonged to this interesting structure, perhaps the earliest temple of Hellas. The presence of this piece of wall may prove of exceptional importance, inasmuch as its lower portion was evidently not visible at the time the temple was completed, and the objects found below this line would thus antedate the erection of the temple. Two other stones appear to be *in situ*. But it is impossible at this moment to hazard even a suggestion with regard to the construction of the early temple. At all events, we have cleared this important site, and it is now in a state to be carefully studied for the light it may throw upon the earliest history of civilization in Greece. The yield in objects of early ceramic art, some bronzes and peculiar rude engraved stones, was very rich, and of extreme importance and interest. I have little doubt that these finds alone are of sufficient weight to justify the energy and money expended upon the undertaking, as they are sure to throw most valuable light on the history of the earliest art in Greece. We dug two broad trenches outside the Cyclopean wall to the east and west of the plateau, in order to make sure whether there were any objects of interest which had fallen over the supporting walls.

"When the work on the platform of the Old Temple was completed, we made the slope from the upper terrace down to the terrace of the Second Temple the centre of our exertions (Fig. 39). It was exceedingly difficult to excavate on this site, because the existence of buildings at the immediate foot of the slope had already been proved by our discovery last year of the outer line of the Stoa (II). We had therefore to work with great care from above, immediately below the Cyclopean wall of the upper terrace, and had to construct a steep road leading from the point marked T to the top of the slope, dumping our earth either at the southeast dump or at the southwest dump. When we had dug several feet below the Cyclopean wall, we at once came upon very rich layers of early pottery of all descriptions, and soon found various vestiges of buildings. These were erected on the height above the buildings corresponding to the North Stoa, and immediately below the Cyclopean wall. They consisted of portions of walls built of loose unhewn stones placed together without mortar or clamps, and evidently formed the smaller, perhaps domestic, counterpart to the structures known as Cyclopean walls. The objects found in some of these make it not improbable that they may have been the houses in which dwelt the priestesses or attendants of the earlier temple, though I should not venture upon any hypothesis at this moment with any claim to your serious consideration. There are also traces of a rough pavement sloping downwards from about the middle of the Cyclopean wall (below it) to the west, and behind the back wall of Stoa II. This may have been an early road leading up to these dwellings. With due care to preserve the remains of these early buildings, we dug down to the bed-rock on this slope; and then came the task of clearing the whole series of buildings on a line with the Stoa. The length of these

structures is about 100 metres, with an average depth or width (including the back walls) of about 10 metres.

"Of Stoa II. merely the outer stylobate had been discovered last year. Behind this, the inner colonnade measures 8.65 metres, and is backed by a wall of over one metre in width, which is built against the slope. There were at least nineteen pillars running along the centre of this stoa. Some of the pillars were found *in situ*. There is also an interesting system of drains and waterworks attached to this building, with some curious structures within it, which, however, are probably of a later date. But I do not think that this can be assumed of a curious structure towards the northeast corner of the east end of the Stoa as excavated last year; it is a depressed flat cemented surface, 3.80 metres in length by three metres wide, reminding us of the Bath of Tiryns, and probably serving the same purpose. The Stoa (II) runs, from a few metres to the east of the east end discovered last year, for 55.52 metres to the west, ending about on a line with the east end of the Second Temple. A more intricate building was discovered to the east of the Stoa, extending farther east than the eastern limit of the Cyclopean wall of the upper terrace (III). The original structure, of which much is still standing, was evidently rebuilt at a later period; and the stone inscribed with ΔΙΓΟΝΥΣΙΟ (i. e. Διϝονυσίου, containing, as you see, a digamma) was evidently immured at a later period. . . .



FIG. 39. — WORK ON THE SLOPE BETWEEN THE OLD TEMPLE AND THE SECOND TEMPLE, IN THE SECOND SEASON.

"Besides a rich find in pottery, terra-cotta, bronzes, and smaller objects (among which I must mention a later clay lamp containing the figure of the Polycleitan Doryphorus), this building yielded a beautiful torso of a draped female figure, probably from the metopes of the temple, three fine marble heads, and many other fragments.

"Together with this work at the northeast portion of the second platform extensive excavations were carried on at the southeast corner. The ground to the east and north of the *Phylakeion* (XI) was leveled; while to the outside of the eastern terrace wall the trench was continued, and interesting walls or steps were laid bare as far as the dump. Both these points yielded a very rich harvest of ceramic and bronze works, engraved gems, and glass scarabs. . . .

"South of the foundation walls of the Second Temple, the whole ground was cut away at the level of last year's deep cutting at the southwest angle of the temple. Below and slightly to the west of the house (F) a deep and wide trench was cut. In all these cases we came upon layers that antedated the construction of the Second Temple, as was shown by the archaic objects found.

"I also tested the ground at the foot of the hill to the south and southwest of the steps (I), and was pleased to find that we soon came upon native rock. It was thus possible to dig upwards from below and to avoid a distant transportation of the earth. We had merely to dig up the earth until we had reached virgin soil, and to shovel it back upon the lower rock-bed. In this manner we cleared the slope up to the steps (I) which were found last year.

"Perhaps the most interesting portion of this year's work will prove to be the excavations at the southwest platform below the Second Temple. I began by cutting a trench at the southwest corner of the old retaining wall, running from west to east. I soon came upon a wall of beautiful Greek masonry (Fig. 40), of which four courses of well-cut blocks were still standing. We carried this trench on as far as the continuation of the retaining wall at the east of last year's deep

CAMPAIGN OF 1893.

"In our second campaign, in 1893, I was assisted by Messrs. Lythgoe, Meader, and Norton, who took part in the excavation from the beginning to the end, and had each charge of definite portions of the site as responsible overseers and directors of the workmen under their command. These gentlemen, with Dr. Washington, remained on the site, and continued the excavations for several days after I was forced to leave, and during these days some of the most interesting objects of sculpture were found. . . .

"We pitched our camp on the rocky elevation above the Older Temple on March 30, the Greek government having kindly lent us three good tents from their army stores. The experiment of camping on the site itself has proved a great success, and one which it would be well to adopt in the future. We at once engaged workmen, and were enabled to start the next day with 112 men and 23 carts. On April 1, we had 130 men and 30 carts; on April 3, 200 men and 38 carts. Our force at last reached the number of 240 men. We began to excavate on the upper plateau, the site of the Older Temple. . . . We cleared off all the top soil down to the early substructure, about 45 metres in length by 35 metres in breadth. The burnt layer alluded to in my report of last year again appeared on various portions of this site, together with masses of *poros* stone, which had evidently been split into smaller pieces by the heat of a great conflagration. We were fortunate enough to find still standing on this terrace a portion of the early wall, about 14.30 metres in length by a little over a metre in width, which certainly must have belonged to this interesting structure, perhaps the earliest temple of Hellas. The presence of this piece of wall may prove of exceptional importance, inasmuch as its lower portion was evidently not visible at the time the temple was completed, and the objects found below this line would thus antedate the erection of the temple. Two other stones appear to be *in situ*. But it is impossible at this moment to hazard even a suggestion with regard to the construction of the early temple. At all events, we have cleared this important site, and it is now in a state to be carefully studied for the light it may throw upon the earliest history of civilization in Greece. The yield in objects of early ceramic art, some bronzes and peculiar rude engraved stones, was very rich, and of extreme importance and interest. I have little doubt that these finds alone are of sufficient weight to justify the energy and money expended upon the undertaking, as they are sure to throw most valuable light on the history of the earliest art in Greece. We dug two broad trenches outside the Cyclopean wall to the east and west of the plateau, in order to make sure whether there were any objects of interest which had fallen over the supporting walls.

"When the work on the platform of the Old Temple was completed, we made the slope from the upper terrace down to the terrace of the Second Temple the centre of our exertions (Fig. 39). It was exceedingly difficult to excavate on this site, because the existence of buildings at the immediate foot of the slope had already been proved by our discovery last year of the outer line of the Stoa (II). We had therefore to work with great care from above, immediately below the Cyclopean wall of the upper terrace, and had to construct a steep road leading from the point marked T to the top of the slope, dumping our earth either at the southeast dump or at the southwest dump. When we had dug several feet below the Cyclopean wall, we at once came upon very rich layers of early pottery of all descriptions, and soon found various vestiges of buildings. These were erected on the height above the buildings corresponding to the North Stoa, and immediately below the Cyclopean wall. They consisted of portions of walls built of loose unhewn stones placed together without mortar or clamps, and evidently formed the smaller, perhaps domestic, counterpart to the structures known as Cyclopean walls. The objects found in some of these make it not improbable that they may have been the houses in which dwelt the priestesses or attendants of the earlier temple, though I should not venture upon any hypothesis at this moment with any claim to your serious consideration. There are also traces of a rough pavement sloping downwards from about the middle of the Cyclopean wall (below it) to the west, and behind the back wall of Stoa II. This may have been an early road leading up to these dwellings. With due care to preserve the remains of these early buildings, we dug down to the bed-rock on this slope; and then came the task of clearing the whole series of buildings on a line with the Stoa. The length of these

structures is about 100 metres, with an average depth or width (including the back walls) of about 10 metres.

"Of Stoa II. merely the outer stylobate had been discovered last year. Behind this, the inner colonnade measures 8.65 metres, and is backed by a wall of over one metre in width, which is built against the slope. There were at least nineteen pillars running along the centre of this stoa. Some of the pillars were found *in situ*. There is also an interesting system of drains and waterworks attached to this building, with some curious structures within it, which, however, are probably of a later date. But I do not think that this can be assumed of a curious structure towards the northeast corner of the east end of the Stoa as excavated last year: it is a depressed flat cemented surface, 3.80 metres in length by three metres wide, reminding us of the Bath of Tiryns, and probably serving the same purpose. The Stoa (II) runs, from a few metres to the east of the east end discovered last year, for 55.52 metres to the west, ending about on a line with the east end of the Second Temple. A more intricate building was discovered to the east of the Stoa, extending farther east than the eastern limit of the Cyclopean wall of the upper terrace (III). The original structure, of which much is still standing, was evidently rebuilt at a later period: and the stone inscribed with ΔIFONVΣIO (i. e. Διφόρνιον, containing, as you see, a digamma) was evidently immured at a later period. . . .



Fig. 39. — Work on the Slope between the Old Temple and the Second Temple, in the Second Season.

"Besides a rich find in pottery, terra-cotta, bronzes, and smaller objects (among which I must mention a later clay lamp containing the figure of the Polycleitan Doryphorus), this building yielded a beautiful torso of a draped female figure, probably from the metopes of the temple, three fine marble heads, and many other fragments.

"Together with this work at the northeast portion of the second platform extensive excavations were carried on at the southeast corner. The ground to the east and north of the *Phylakeion* (XI) was leveled; while to the outside of the eastern terrace wall the trench was continued, and interesting walls or steps were laid bare as far as the dump. Both these points yielded a very rich harvest of ceramic and bronze works, engraved gems, and glass scarabs. . . .

"South of the foundation walls of the Second Temple, the whole ground was cut away at the level of last year's deep cutting at the southwest angle of the temple. Below and slightly to the west of the house (F) a deep and wide trench was cut. In all these cases we came upon layers that antedated the construction of the Second Temple, as was shown by the archaic objects found.

"I also tested the ground at the foot of the hill to the south and southwest of the steps (I), and was pleased to find that we soon came upon native rock. It was thus possible to dig upwards from below and to avoid a distant transportation of the earth. We had merely to dig up the earth until we had reached virgin soil, and to shovel it back upon the lower rock-bed. In this manner we cleared the slope up to the steps (I) which were found last year.

"Perhaps the most interesting portion of this year's work will prove to be the excavations at the southwest platform below the Second Temple. I began by cutting a trench at the southwest corner of the old retaining wall, running from west to east. I soon came upon a wall of beautiful Greek masonry (Fig. 40), of which four courses of well-cut blocks were still standing. We carried this trench on as far as the continuation of the retaining wall at the east of last year's deep

cutting. We then worked northwards. Messrs. Washington and Norton continued the work after my departure, with the result that two sides (and the interior inclosed within them) of a very interesting building have been unearthed, with walls, and column-bases *in situ*, the whole presenting a very interesting ground plan. This building we call the West Building (Fig. 41). Below the south wall of this building we also excavated as far as the most western of the broad cuttings on the south slope below the temple marked N on last year's map. Immediately in front of this wall (south wall of West Building) large portions of the entablature of a Doric building were found, upon which were distinct traces of color, — reds, blues, greens, etc. After my departure other polychrome pieces were found.

"Besides interesting smaller objects from this site, a number of fragments of marble sculptures, evidently coming from the Second Temple and forming parts of the metopes, and I believe also of the pediments, were found. I must also add that among the heads discovered, one head (probably from a metope) is in excellent preservation, and very nearly equals in beauty the head of Hera found last year; while the torso of a draped female figure from the metopes forms a fitting counterpart to the torso of the nude warrior of last year's metope." . . .

CAMPAIGN OF 1894.

"The third campaign was begun on March 21, 1894. The regular staff consisted, besides myself, of Dr. Washington and Mr. Norton, and of Messrs. Hoppin and Alden, students of the School. All the members and students of the School were invited to stay for a few days in the camp, in order to study and gain experience in excavations as such. Of this invitation, Messrs. Parsons, Fallis, and Hill availed themselves; while the other students, though they were prevented from staying with us owing to their travels with Dr. Dörpfeld, saw the excavations on the occasion of the visit which Dr. Dörpfeld and his party paid us. My colleague, Professor Richardson, paid us two visits, during one of which he remained with us over a week. Professor White was also our guest, though I am afraid he will not consider it an hospitable camp in which we allowed the storm to carry away his tent in the middle of the night. We had many other visitors of all nationalities. Among our American visitors, ladies and gentlemen, I must single out Mr. Edward Robinson, of the Boston Museum of Fine Arts; and Mr. Thayer, of Boston, who, on the spot, contributed one hundred dollars to the fund of excavation. Dr. Dörpfeld made the Heraeum a point for one of his instructive lectures during his Peloponnesian tour. With him were a number of distinguished scholars, among them Professors Loeschcke, Wecklein, and Fränkel. Dr. Dörpfeld and Professor Loeschcke joined Professor White in staying in our camp the night of their visit. We also had a visit from Mr. Kabbadias, the Ephor-General of Antiquities, who was our guest for a day and night. . . . The British Minister, Mr. Egerton, also paid us a visit. The School must also feel honored by a second instance of the interest which

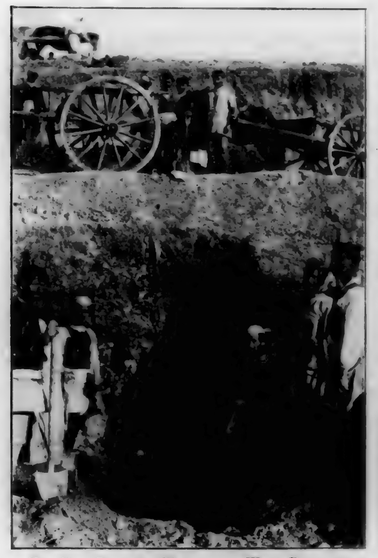


FIG. 40. — PIECE OF WALL FROM WEST BUILDING, FIRST APPEARANCE.

the Royal Family of Greece has shown in our work. The King and Queen, the Crown Prince and Crown Princess, and Princess Mary, with their suite, made our excavations the object of a special journey. It was the first time they had visited an excavation away from Athens. They remained with us over five hours, and manifested the keenest interest in the progress of the work.

"Our camp was pitched on the same site as last year, the government providing us with five tents, while I had ordered a sixth from England, provided with a double fly, which experience had shown me was absolutely necessary as a refuge against the sun in the heat of the day. This tent, together with the tools and instruments we have accumulated, will form a useful addition to the School's apparatus for exploration and excavation in future years.

"Our party arrived at Argos on March 21, and we were able to begin work with one hundred and eighty-five men and twenty-six carts on March 22. The following day we worked with two hundred and fifty men and thirty carts, below which number we did not fall, increasing our corps to two hundred and seventy men.

"The first task we had set ourselves was to complete the clearing of the whole east side of the second platform (Fig. 41). We thus had to cut away the hillside to the east of the buildings we had found last year, which are now called the East Chambers, in which was the inscription ΔΙΓΟ-ΝΥΣΙΟ. We carried this cutting about twenty feet in depth to a length of ninety feet, to the old wall marked T in the map. This was very difficult digging, inasmuch as there were huge blocks, imbedded at every stage, which had fallen from above, while below we came upon complicated early walls of different periods, which had to be spared and carefully cleared. The nature and purpose of these will require careful study. Backing the slope, and acting as a supporting wall to the upper terrace, below and to the east of the great Cyclopean wall of the upper terrace, another Cyclopean wall runs for about eight feet, when it ends abruptly, lines of sloping rubbish clearly showing in the cutting how the earth had drifted over this end for ages.

"Below and partly underneath this Cyclopean wall, there were large masses of pottery, iron, bronze, and smaller objects, the majority belonging to the 'Dipylon' and Mycenaean periods. Farther to the south there were deposits of rubbish which evidently dated from a period of destruction in later years, as we here also found a marble head of the Roman period. Here it was that we found also, in beautiful preservation, an interesting specimen of Greek sculpture, a head of an ephebus from the metopes of the Second Temple. The head is in excellent preservation, even the tip of the nose being intact. This head bears beyond a doubt, in my mind, the characteristics of Polycleitan art as hitherto known to us. There is the same square and massive proportion of the head as a whole, the heavy treatment of the jaws and chin, that we find in the head of the Naples Doryphorus, — in fact, it seems to me to be a reproduction of the type of the Doryphorus in the style of these metopes. Moreover, it will interest you to hear that, in spite of some mutual divergences, this head has, in common with all the others which we have found on this site, some peculiarities of treatment, such as the slightly opened mouth and peculiar protrusion and curving of the under lip. I do not wish to convey the idea that I claim this or any of the other heads as work by the hand of Polycleitus, but I maintain that they bear out in their general character and in details of work the natural expectation that the sculptures which decorated the second Heraeum of Argos would be related to the art of the sculptor Polycleitus, who created the temple-statue of Hera in this sanctuary, as Phidias created the Athena in the Parthenon, and who, like the great Attic sculptor, was the inspiring head of a thriving school of sculpture in his own locality.

"Among the many objects found here, I must mention the large number of objects in iron. In fact, throughout our excavations we have often found iron together with bronze and even stone implements. A strange object was a large mass of iron about five feet long and a foot in diameter, which proved to be a mass of iron spears bound together with bands of iron at both ends. We found at the same place another large, solid, rectangular bar of iron, flattened out about a foot from one end, which is quite inexplicable.

"At the easternmost angle of the terrace of the Second Temple, above the retaining wall W, to the north of the dump S, another building was discovered, which we have named the East Building (to distinguish it from the East Chambers). This building, supported by strong walls on south and east, built against the hill-slope, has on the north side a wall of *poros* strengthened

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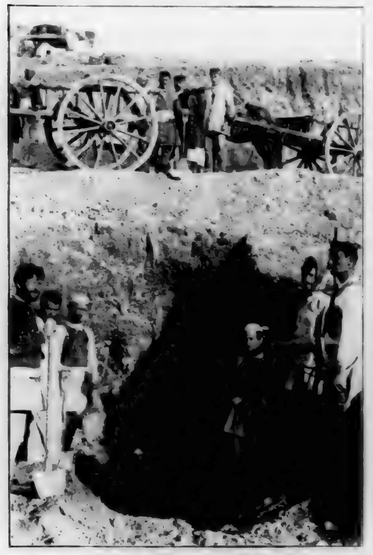


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by a limestone wall. The bases of three rows of five columns are extant in the interior, while at the west front (facing the temple) it had a portico. In this building numerous objects in gold, silver, bronze, and terra-cotta were found, as well as a scarab with a cartouche, probably of Thothmes III.

"We also cleared away all the earth remaining to the east of the temple, and to the west of the dump S, without finding much there.

"We then turned to the west and south slopes of the terrace, — the main points of this year's excavations (Fig. 42).

"The larger portion of the West Building, which lies below the west end of the Second Temple, about twenty-five to thirty feet below the top of the foundation walls of the temple, was excavated last year. We now cleared the north end, where the space for the building has been cut out of the rock which rises at the north end. We here found three chambers which communicate with the colonnade and central court. The whole is a very interesting building, the purpose of which (whether gymnasium, treasury, or combination of buildings) I do not venture to decide at present. It is a building about one hundred feet (33 metres) by ninety-three (30 metres), consisting of a colonnade surrounding an open court in the centre, while to the north it is flanked by the three



Fig. 41. — Corner of the Second Platform, with front of East Building in right Foreground.

chambers running from east to west. It appears to be older than the Second Temple, not later than the first half of the fifth century B. C. Here, as in the Upper Stoa, there are drums of columns *in situ*, besides the pillar bases, and in some places several layers of the stone walls. In this building there were numerous fragments of the architectural decorations, as well as fragments of sculpture and smaller objects.

"We also cleared the ground to the north of this building to the bed-rock, and at the western point, to the south of the dump S, we again came upon ruins of interesting buildings. Above the old supporting walls is the building which we call the Northwest Building. It was difficult digging, since here too we found intricate walls, and it required Mr. Hoppin's best attention to carry on the work which was placed in his charge. However, the plan was finally worked out with clearness, and shows a long building (31 metres long by 11.40 wide) of early structure. In digging here we turned up some fragments which had fallen down from the Second Temple: the face of a colossal female head, bronze and terra-cotta cows' heads, objects in gold and silver (among them a silver ring studded with gold and inscribed), etc. This building may be connected with the traces of the building in the field below, which in the first year we thought might be Roman.

"On the south slope below the Second Temple, we began on the same system we had previously adopted, working at the bottom of the hill below, and to the east and west of the steps (I). Finding bed-rock, we had merely to turn over the earth as we advanced upwards, and ultimately we were enabled to turn the whole of the part to the south of the steps (I) into a large dump for all the mass of earth we had to cut away between the Second Temple and these steps. We found a thick wall running from east to west at a depth of over fifteen feet below last year's surface on the south of the second plateau, and upon this abutted the beautiful limestone wall which we found projecting southward last year from the southeast corner of the West Building. This limestone wall must have formed part of the west front of the great building which we are now excavating on the south slope. About ninety feet of this building, with pillar bases, upon some of which drums are *in situ*, have already been laid bare; and we shall have to continue to carry away the great mass of earth which covers this building along the whole south slope. I have no doubt that it will prove to have been a very important and imposing structure. In the mass of earth which covers it, we have found fragments of masonry from the Second Temple: large drums from the columns, as well as complete Doric capitals, also two torsos of sculpture, and many fragments belonging to the metopes of the Second Temple. At the same time, another large gang of workmen was engaged in cutting away the south slope towards the east, in the region below the house (F), and we are thus working from both sides to clear away the accumulated earth, while we are making a continuous terrace of the dump below the stairs (I). When the excavations are completed, there will thus be a continuous series of interesting buildings running from the foot of the hill upwards, tier upon tier, to the terrace of the first temple on the summit. With the completion of this part of our work, as well as with the thorough investigation of the regions about the Lower Stoa (CC, J, K, and L), which are bounded by the river, the whole site will have been thoroughly investigated. I must also remark that behind the *poros* supporting wall, running from north to south at the east of the West Building, we have found rich layers of early antiquities corresponding to the 'black layer' we found in the first year. In fact, it appears to me that this layer is continuous with the one found in the first year, the objects being arrested by the retaining wall. Considering the variety and number of objects found here, it would be impossible for me to give any adequate idea of the richness of our find. They comprise every material, from a beautiful large solid gold pin to objects in lead, iron, bone, ivory, and clay, and touch upon every field, — epigraphy as well as art, mythology, and antiquities. We have brought to Athens over eighty baskets full of objects of this kind, together with larger fragments of marble sculpture, cornices in stone and terra-cotta. A curious and interesting discovery was made to the north of the back wall of the building on the south slope, at some depth below what was the original ancient surface. There were found some early graves of the Mycenaean period, such as have been recently found at Salamis. One of these was well preserved, — a small shaft-tomb containing the bones of the deceased, and several vases in perfect preservation, of the earliest Mycenaean type. They evidently belong to a period when the *temenus* of the early temple of Hera was limited by the upper terrace, and the region of these graves must have been quite outside the *peribolus* wall.

"The climax of our good fortune was reached when, a few days before the close of this campaign, we found, what for several years we had been seeking in vain; namely, the beehive tombs of the Mycenaean period. The first is about three hundred yards to the northwest of the temple, beyond the Eleutherion; the second, only about sixty yards to the northwest of the Eleutherion. They are both of the beehive shape, cut into the rock, without interior masonry, — the approach being by the narrow *dromos* which leads into the underground door, which after the burial was blocked by means of large stones. The interior is circular, the diameter being about 2.46 metres, the height being 3.38 metres. The first of these tombs, discovered on April 20, was the repository for at least three corpses, and may have contained more. The dead were certainly not laid out in the tomb, as the bones were found massed together without any anatomical relation to one another. The finds in the first tomb were exceedingly rich. It contained forty-nine vases, nearly all in perfect preservation, three terra-cotta figurines of the earliest type, one chair with interesting Mycenaean ornaments, one engraved stone of the 'Island' type, four steatite whorls, one ivory needle, and a number of beads. The second tomb contained a large number of beads and whorls, but only

by a limestone wall. The bases of three rows of five columns are extant in the interior, while at the west front (facing the temple) it had a portico. In this building numerous objects in gold, silver, bronze, and terra-cotta were found, as well as a scarab with a cartouche, probably of Thothmes III.

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Fig. 41. — Corner of the Second Platform, with front of East Building in right Foreground.

chambers running from east to west. It appears to be older than the Second Temple, not later than the first half of the fifth century B. C. Here, as in the Upper Stoa, there are drums of columns *in situ*, besides the pillar bases, and in some places several layers of the stone walls. In this building there were numerous fragments of the architectural decorations, as well as fragments of sculpture and smaller objects.

"We also cleared the ground to the north of this building to the bed-rock, and at the western point, to the south of the dump S, we again came upon ruins of interesting buildings. Above the old supporting walls is the building which we call the Northwest Building. It was difficult digging, since here too we found intricate walls, and it required Mr. Hoppin's best attention to carry on the work which was placed in his charge. However, the plan was finally worked out with clearness, and shows a long building (31 metres long by 11.40 wide) of early structure. In digging here we turned up some fragments which had fallen down from the Second Temple: the face of a colossal female head, bronze and terra-cotta cows' heads, objects in gold and silver (among them a silver ring studded with gold and inscribed), etc. This building may be connected with the traces of the building in the field below, which in the first year we thought might be Roman.

"On the south slope below the Second Temple, we began on the same system we had previously adopted, working at the bottom of the hill below, and to the east and west of the steps (I). Finding bed-rock, we had merely to turn over the earth as we advanced upwards, and ultimately we were enabled to turn the whole of the part to the south of the steps (I) into a large dump for all the mass of earth we had to cut away between the Second Temple and these steps. We found a thick wall running from east to west at a depth of over fifteen feet below last year's surface on the south of the second plateau, and upon this abutted the beautiful limestone wall which we found projecting southward last year from the southeast corner of the West Building. This limestone wall must have formed part of the west front of the great building which we are now excavating on the south slope. About ninety feet of this building, with pillar bases, upon some of which drums are *in situ*, have already been laid bare; and we shall have to continue to carry away the great mass of earth which covers this building along the whole south slope. I have no doubt that it will prove to have been a very important and imposing structure. In the mass of earth which covers it, we have found fragments of masonry from the Second Temple: large drums from the columns, as well as complete Doric capitals, also two torsos of sculpture, and many fragments belonging to the metopes of the Second Temple. At the same time, another large gang of workmen was engaged in cutting away the south slope towards the east, in the region below the house (F), and we are thus working from both sides to clear away the accumulated earth, while we are making a continuous terrace of the dump below the stairs (I). When the excavations are completed, there will thus be a continuous series of interesting buildings running from the foot of the hill upwards, tier upon tier, to the terrace of the first temple on the summit. With the completion of this part of our work, as well as with the thorough investigation of the regions about the Lower Stoa (CC, J, K, and L), which are bounded by the river, the whole site will have been thoroughly investigated. I must also remark that behind the *poros* supporting wall, running from north to south at the east of the West Building, we have found rich layers of early antiquities corresponding to the 'black layer' we found in the first year. In fact, it appears to me that this layer is continuous with the one found in the first year, the objects being arrested by the retaining wall. Considering the variety and number of objects found here, it would be impossible for me to give any adequate idea of the richness of our find. They comprise every material, from a beautiful large solid gold pin to objects in lead, iron, bone, ivory, and clay, and touch upon every field, — epigraphy as well as art, mythology, and antiquities. We have brought to Athens over eighty baskets full of objects of this kind, together with larger fragments of marble sculpture, cornices in stone and terra-cotta. A curious and interesting discovery was made to the north of the back wall of the building on the south slope, at some depth below what was the original ancient surface. There were found some early graves of the Mycenaean period, such as have been recently found at Salamis. One of these was well preserved, — a small shaft-tomb containing the bones of the deceased, and several vases in perfect preservation, of the earliest Mycenaean type. They evidently belong to a period when the *temenus* of the early temple of Hera was limited by the upper terrace, and the region of these graves must have been quite outside the *peribolus* wall.

"The climax of our good fortune was reached when, a few days before the close of this campaign, we found, what for several years we had been seeking in vain; namely, the beehive tombs of the Mycenaean period. The first is about three hundred yards to the northwest of the temple, beyond the Eleutherion; the second, only about sixty yards to the northwest of the Eleutherion. They are both of the beehive shape, cut into the rock, without interior masonry, — the approach being by the narrow *dromos* which leads into the underground door, which after the burial was blocked by means of large stones. The interior is circular, the diameter being about 2.46 metres, the height being 3.38 metres. The first of these tombs, discovered on April 20, was the repository for at least three corpses, and may have contained more. The dead were certainly not laid out in the tomb, as the bones were found massed together without any anatomical relation to one another. The finds in the first tomb were exceedingly rich. It contained forty-nine vases, nearly all in perfect preservation, three terra-cotta figurines of the earliest type, one chair with interesting Mycenaean ornaments, one engraved stone of the 'Island' type, four steatite whorls, one ivory needle, and a number of beads. The second tomb contained a large number of beads and whorls, but only

one complete vase and a number of fragments. These finds appear to me of exceeding interest and importance with regard to early Mycenaean pottery; and the interest of the discovery may be increased by the fact that the sun shone into the opening which had been broken into the top of the rock, so that we were able to take photographs of the vases and bones *in situ*. . . .

"The last campaign was begun on March 22, 1895. As I was kept at Rome on my way here by an attack of influenza, I telegraphed to Mr. Hoppin to begin work according to the plan we had arranged before he left for Greece. Accordingly, on March 22, Mr. Hoppin began to excavate the south slope below the Second Temple at the point at which we had left it last season, and thus had charge of the work for several days before I arrived. During these days Mr. Hoppin was not only able to make most valuable discoveries, such as the two best preserved metope heads, but he pushed on the clearing of the South Stoa for many feet, having to clear away about twenty feet of superimposed earth for the whole length and width of the stoa. He has since proved a most efficient aid to me, and with his two years' experience in excavation, as well as his archaeological studies in German universities, he is likely to become a well-equipped archaeologist. I am much gratified to hear from him that he intends to spend the winter and spring of the two coming years at Athens to arrange and elaborate our finds from the Heraeum. In this task he will be



Fig. 42. — The Roman Building, with Southwest Stoa on the left, and Portion of West Building in the Foreground.

aided by Mr. Heermance from Yale University, who joined Mr. Hoppin at the beginning of our work this year, and was with us for several weeks, until he went with Dr. Dörpfeld's party on the Peloponnesian tour. I venture to predict that he also will be of the greatest help in arranging and working out our finds, while he himself will gain much experience and valuable information in performing this task. Mr. Rogers, of Columbia College, New York, has been with us for several weeks now, and is taking charge of all the work on the west side. He will remain till the campaign is ended, and will undoubtedly be of great assistance to us. . . .

"I owe the Committee a great debt of gratitude for the wisdom with which they have selected an architect to assist us in our work here, and to prepare plans and drawings of the excavations. Mr. Tilton has taken up his work with such energy and intelligence that we may hope for an adequate,

perhaps a brilliant, presentation of the architectural side of our publication. Mr. Tilton purposes to remain here for a week after the excavations are closed, to supervise the cleaning of the buildings, with about ten workmen. Mr. Rogers has promised to join him during this period. In the course of the summer Mr. Tilton intends to meet me in England, in order that we may discuss and decide upon the general plan, as well as the details, of the architectural publication.

"The work we have this year done on the south slope (below the Second Temple) appears to me, as I see it now, astonishing with regard to the amount of earth that has been removed. This would not have been possible, had we not at the beginning of last season found bed-rock at the



Fig. 43. — First Trench dug at South Stoa.

bottom of the little valley and for some way up, so that we could place a continuous dump half way up the hill on the south slope. Our carts had thus to travel but a short distance before our eyes, and we could make a continuous dump below the line of building found on the south slope.

"At the close of the last season we had found the beginning of a building, one side of which abutted on the southeast corner of what we have hitherto called the West Building, and which ran from east to west along the south slope about forty feet below the top of the foundation wall of the Second Temple, and parallel to it. We had also cut in for about ten feet behind the supporting wall east of the West Building, which separates this building from the Second Temple above it. We now continued to clear out this South Stoa (Fig. 43). It was difficult digging, as there was an average of twenty feet of earth to be removed for its whole length, and large stones, drums of columns, capitals, and blocks had fallen from the terrace above, all of which had to be removed to the nearest point where they would not block the way for excavation, and carefully deposited there. As I am now writing the building is quite clear (Fig. 44). It is a beautiful stoa, imposing in its vast length, with walls of most perfect Greek masonry, of which four and even five layers are standing all around. Within there are nine Doric pillars. All the pillar bases are *in situ*; three have the lower drum, while one has two drums, — the remaining four, together with the capital in good preservation, having fallen immediately in front of this. At the back wall (north) there are well-worked pilasters, one to each alternate pillar. The stoa is about forty-five metres long by about thirteen metres wide. It faces towards the south (i. e. towards Argos), and is approached by a continuous flight of steps. The temple above it must have fallen in before this stoa was destroyed,

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Fig. 44. — South Stoa, after Excavation.

since, especially in the western half, we found huge drums of the column from the temple which had crashed through the roof, with *geison* blocks, and, fortunately for us, also metopes and *sima*. The flooring was thus in parts littered with fragments of marble from roof tiles and metopes. Among these were several pieces of sculptured metopes, and of the *sima*, fragments of arms, legs, torsos of bodies, etc., all from the high relief of the metopes, and two well-preserved heads (one quite perfect), with portions of three others. This stoa is perhaps the best preserved of all the buildings which we have found, and is certainly one of the most imposing I know in Greece.

"We also cut into the slope to the west of this stoa, but were soon convinced that no ancient building stood here; we found, however, the traces of a huge staircase which covered the whole slope on this side leading up to the great platform of the temple. There was thus on the south side of the temples facing Argos a magnificent approach to the sanctuary; and it is interesting to note that the line of buildings and the access to them belonging to this period face to the south and east, while the earlier buildings are massed on the west side. This corresponds to the change from the Mycenaean to the Argive supremacy.

"At the close of the last season, we had cut off the slope evenly behind the back wall of that portion of the stoa which was then discovered. It was a huge cutting. Upon arriving this spring, I found that the rain had washed away some of the earth from the side of the cutting, and here appeared a portion of a column-drum from the Second Temple. How this had fallen there it is difficult to explain. Reluctantly (for I knew there could be no building there), I felt bound to dig here again. We thus had to cut away further ten feet of earth to a depth of over twenty feet and for a length of forty-five metres. All this earth was filling for the foundations of the upper temple, and contained a great mass of pre-archaic Greek objects, such as we had found in previous years in this same filling. We also dug down to bed-rock for the whole length inside (to the east) of the supporting wall before the West Building (Fig. 45).

"Some interesting results appeared from this work. We were much astonished last year when Dr. Washington found in the corner behind this supporting wall and the back of the South Stoa wall Mycenaean graves such as have been found at Salamis. I could only explain this to myself by the supposition that this site was outside the earliest *peribolus*. We now found such early

walls of the Mycenaean period here, together with some such graves, and a great number of vases and small objects outside these early walls. Such walls also appeared on the whole west slope, north and northeast of the West Building, where Mr. Rogers had charge of the work, and where we have cleared the whole site down to bed-rock. We can now say with confidence that nothing remains unexcavated *within* the ancient *peribolus*.

"We have now attacked also the fields to the west and southwest, *outside* the *peribolus* walls, where in exploring during the first season we had traced a large stoa and conjectured that there was a Roman temple. This conjecture was a happy one in so far as in the field below, immediately to the west of the temple and bordered by the stream (Eleutherion) on its outer (northern and western) sides, we have found buildings of the Roman period, — an extensive and complex system of Roman baths. This is interesting also in its bearing upon the whole nature and function of the sanctuary.

"The other large field I shall excavate as far as possible, and shall especially do my best to enable our architect to make plans of the buildings.

"A few words about our finds. In this respect we have been as lucky as ever. I have already



Fig. 45. — West Building (VII), after Excavation.

referred to the metope fragments and to the heads. These latter correspond to those we had already found and belong to the metopes. They are worked in a vigorous manner, and are still of such careful execution that I believe even those of the Parthenon can hardly rival them in this respect. One head of a youth with a helmet is in perfect preservation, even the tip of the nose remaining intact. We shall now have a large number of fragments at Athens, and we may hope to be able to piece some together. At all events the sculptures coming from this temple built by the Argive Eupolemus, with Polycleitus as the sculptor of the temple-statue, are among the most important specimens of the great art of the fifth century B. C.



FIG. 44. — SOUTH STOA, AFTER EXCAVATION.

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FIG. 45. — WEST BUILDING (VII), AFTER EXCAVATION.

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"From the filling to the Second Temple we have about seventy-six baskets full of vases, terra-cottas, bronzes, etc. Though a great part of these came from the dry rubbish used to fill up the platform, I am more and more convinced that in the earlier periods there was some sacred building or great altar on the site of this temple. The early Mycenaean walls along the slopes belong to these, as well as most of the finds which were votive offerings. We have again found here a number of Egyptian objects, including several scarabs. I hope that a French Egyptologist, now sojourning at the French School, will be able to throw some light upon our Egyptian finds. Of smaller objects, gems, and terra-cottas, this year has given a very large harvest.

"We have found several inscriptions, — some of the Roman period; but the most important epigraphical find, perhaps, of the whole excavation, is a bronze plaque about eight inches square with eleven lines of boustrophedon inscription in the earliest Argive characters.

"Owing to the generosity of Mrs. J. W. Clark and of Mr. Hoppin, whose contributions ($1200) have greatly increased the sums which I have received from the Institute ($500) and from the School ($250), as well as that in hand from last year (about $650), we have been well supplied with means this year. I hope to have a considerable surplus. Since Mr. Hoppin has authorized me to use what remains of his and Mrs. Clark's contribution for the preparation of illustrations of our work, I have the photographer Merlin here now, who is taking views of the buildings and the sites, and I shall proceed to make arrangements with Mr. Tilton for the most adequate form of publication.

"It is rash to make promises. More than thirteen years passed before the Germans published the results of their excavations at Olympia; the vase fragments from the Acropolis, which have been in their hands for at least five years, are not yet published, and they tell me that their main difficulty now is to provide proper means of reproduction and publication. I shall do my best, and Mr. Tilton promises to use all his energies to assist me to put into the printer's hands the first volume, containing the introduction, the architecture, and possibly the sculpture, by the autumn of 1896.

"By next spring, after Mr. Hoppin and Mr. Heermance have worked at our finds during the winter, I may be able to make more definite proposals with regard to the other volume or volumes."

NOTE A (See page 11).

In this case, as in so many others when problems of ancient archaeology and history are concerned, it is important to consider the personal equation of the authors and the conditions and circumstances under which they wrote, before using or quoting passages from them, as historical or critical evidence. In this special case it is well to bear in mind that, of the two travelers, Pausanias has a bias in the direction of folk-lore and mythography, pervading and sometimes overpowering his antiquarian or archaeological interests; while Strabo is a geographer with a stronger historical bias, possessed of more sober and critical insight and a pronounced appreciation of literary tradition, the Homeric poems being to him the centre of literary importance. While we may often deplore the inaccuracy and credulity of Pausanias, or at least the inadequacy of his description of objects which to us are of supreme interest; while we are often impatient and irritated with him for his diffuse excursions into the regions of unprofitable hearsay, when he omits the mention or to describe most important facts and monuments, we must recognize that these very faults make him a most useful source of information to the student of folk-lore and mythology, and even to the historian who has to consider the local traditions and the earliest sources of information.

Strabo, on the other hand, clings to the historical facts before him, and probably draws much of his information from such writers as Ephorus; and when he goes beyond these he turns to literature, — the literature which he had before him, — and ignores folk-lore and tradition. To him Homer is not only the poet, ὁ ποιητής, but also the central repository of the earliest lore and the only source from which trustworthy information concerning the earliest history of the Hellenic land and Hellenic traditions can be had. Thus in common with writers of his own age, and with most scholars of our own times, he becomes in matters archaeological and historical a Homer worshiper. But we are now in a position to assert that, as regards the earliest history of Greek life and Greek religion, Homer himself becomes the more useful and instructive the more we supplement the Homeric poems by the records of local and popular traditions in word and stone. These are scattered through the authors and exhumed from the earth, they point to still earlier periods, and show the constitution of the material which the genius of the great epic poets has put into such splendid and monumental artistic order.

Thus it is that Strabo, who is fully informed with regard to the Mycenaean and Argive periods in the early history of the Heraeum and of the whole plain and country, is practically ignorant of or ignores the Tirynthian period. There are two main causes for this omission on his part.

(1) When he wrote about this district the city of Argos had a great history, and was thus naturally the centre on which he stood in order to focus and to observe the historical region which he attempted to explore critically. Mycenae was in time and space nearest to Argos, and he could follow more readily its destruction by the latter, and its previous hegemony. This led him as far back as the Homeric period, and here he stopped. Tiryns and Midea, on the other hand, were deserted [1] in his time, and seemed at best only to have been "fortresses," [2] apparently as opposed to cities. He herein forgot that the early cities consisted both of such a fortress or citadel, built of more durable material, and of the town itself, built of perishable material, spreading round the foot of the citadel, such as the Hissarlik-Troy, the early Mycenae itself, and probably the early city of Argos.

(2) The second cause for the omission of Tiryns in Strabo's consideration of the historical phases of the Argive plain and the Heraeum lies in the fact that he restricted himself to Homeric evidence, and that, in his admirable attempt at a careful examination of the passages in Homer, he

[1] Strab. VIII. 6. 11. 373 c ἔρημοι δ' εἰσὶ κἀκεῖναι [2] τῇ μὲν οὖν Τίρυνθι ὁρμητηρίῳ χρήσασθαι δοκεῖ. [Tiryns] καὶ ἡ πλησίον Μιδέα.

is misled by the ambiguous use of the term "Argos." He himself felt, what has been felt often in the writing of this very book, that it is important and difficult to make clear whether one is using the term "Argos" to mean the district or country or the city. He labored under this difficulty himself at the outset of his description in the fifth chapter of the fifth book, and he carefully weighs Homer's use of the term to show that it was used, not only for the district, but also for the Peloponnesus, — nay, the whole of Hellas.[1] But he at once lapses into this error which he tries to avoid when, further on,[2] he says: "And I think that the reputation of this city brought it about that both Pelasgians and Danaans, as well as the Argives themselves, were named after it. And for that, the Greeks as well." And a few lines below he quotes those passages from Homer in which the term "Argos" is used to include Sparta and Corinth and islands. No doubt he finds it difficult[3] to understand how the city of Argos could be called parched and waterless, with its river flowing by it, and considers the tale a figment of the poets; for he cannot see how the tradition of the sinking of wells associated with Danaus, which turned, in the words of Euripides, the waterless (ἄνυδρον) Argos into a plain rich in water (εὔυδρον), applied to the district on the other side of the Inachus, made fertile at this very day by a like system of wells.

For Strabo the history of the district begins with the Danaans, whom he associates exclusively with the city of Argos and Mycenae. "When the descendants of Danaus," he says,[4] "received the inheritance of his sway in Argos, and there mixed with them the Amythaonidae, originating in Pisatis and Triphylia, one would not wonder that, kinsmen as they were, they divided the district into two kingdoms: at first, in such a way that the two sovereign cities in those kingdoms were to be seen situated close to one another at a distance of less than fifty stadia, — namely, the cities of Argos and Mycenae, — and that the Heraeum, standing towards Mycenae, was the sanctuary common to both of them." It will be seen that he has entirely omitted any mention of Tiryns. He then summarizes the history of the district in the following terms: "Originally, then, Argos was the more predominant, after that Mycenae, which received considerable impulse through the immigration of the Pelopidae to it. For after all had joined the sons of Atreus, Agamemnon, as being the older, received the sovereignty, and, by the aid of good fortune and ability combined, added a large district of the country to the possessions which he had before received. And, in particular, he added the Argolic district to the Mycenaean. Thus Menelaus had the Laconian district; while Mycenae and the country as far as Corinth and Sicyon, and the land which at that time was called the land of the Ionians and Aegaleans, fell to the share of Agamemnon. We are told that, after the Trojan war, Agamemnon's rule came to an end, and Mycenae was humbled; and this was especially so after the return of the Heraclidae. For the Heraclidae occupied Peloponnesus, and expelled the former rulers; so that those who held Argos also held Mycenae, now united with Argos. But in after years Mycenae was destroyed by the Argives, so that now not a trace of the city of the Mycenaeans is to be found [?]. Seeing that such has been the fate of Mycenae, one ought not to wonder if some of the places catalogued under Argos are no longer in existence." And thus Strabo leads over to his short account of the "deserted" Tiryns and Midea.

It has been necessary to quote this passage in full, because it makes clear that the researches of Strabo do not lead him further back than the Danaans, since he is restricted to the Homeric poems as his supreme guide. We may also point to the change of locution, the moment his Homeric information ceases with the downfall of the house of Atreus as bearing upon this question. For, without warning, he passes from the direct statement to quotation in using the infinitive (κατανωθῆναι), which he has not used before, and which he does not apply afterwards when he comes to the inroad of the Dorians.

NOTE B (See page 12).

Our primary interest in the ancient remains of this important site and their history need not debar us from dwelling for a moment upon the supreme beauty of the natural scenery. Indeed, the primary claim to archaeological and historical interest which the country of Greece naturally

[1] Cf. end of VIII. 6. 5, 369.
[2] VIII. 6. 9, 371.
[3] VIII. 6. 4 and 5, 370.
[4] VIII. 6. 10, 372.

puts forward has often stood in the way of the due appreciation of the transcendent beauty of its natural scenery, so that this feature often takes the visitor by surprise.

Of all the many beautiful views in Greece, that from the Heraeum is certainly one of the most beautiful. If in this brilliant atmosphere, clear and lucid, yet never lapsing into flaring vulgarity, without ever having the coarseness of the too-manifest, we stand on the temple platform and gaze over the Argive plain, we see on the left, to the southwest, the peaks of Parnon and Parthenion rise in a pale blue limpid light, which seems but a continuation of the blue strip of sea in the Nauplian Gulf, and which causes the azure sky behind, cut into graceful fretwork by the delicate outlines of the mountains, to appear a paler blue. This delicate line of mountain range, chiseled in its finely cut yet never hard features, like beautiful profiles on Greek gems, continuous in its course, harmoniously varied, flows in one long-drawn sweep from our left to our right. And in this evenly flowing outline we can distinguish Artemisium opposite, shelving down by steps, Lycone and Larisa, to where Argos lies, its white monastery of the Panagia crouching and nestling to the rock, a bright white speck above the town. The line of mountains is carried on to the more distant and higher ranges grouping round Cyllene, until, at our right, it is lost in the hills that encircle Nemea. And you know that, jealously guarding the plain where the passes lead to these northernmost mountains, Mycenae crouches among its rocky glens, like a mediaeval keep, wilder, more dismal, as if it stood on guard against a northern land and people. But on our left again, to the south, where Tiryns lies, when the sun turns after noon, the rock fortress of Palamidi juts forth into the blue sea; the sun's rays beat upon its walls, and the windows from the houses of Nauplia gleam and twinkle in the distance, like earth-born daylight stars. And before us, all the time, in peaceful languor, stretches the generous plain of broad-breasted mother Gaia, with all shades of green vegetation in its wheat, barley, and oats, and clumps of olive-trees. Between this green are the bared, dark, red-brown patches of earth where the rude metal-tipped wooden plough, drawn by oxen goaded on by the long-pointed rod, has cut its furrows. These await the tobacco plant, which in its delicate infancy has been sheltered from the rough winds by wicker hurdles, and is growing happily, as from the distance it paints the bright, golden strips between the brown and green. As the sun shines on the snow of the peaks, they gleam like broadened lance-heads of polished silver; and farther down their sides, in the gullies and beneath the rocky ledges, the strong ribs and sinewy flanks of these lofty giants, where the snow has remained, the silver gleam flows out into winding threads.

And all this rich variety of line, form, and color is changed and multiplied in its aspect, though harmonized in its unity of tone, by the succession of the seasons, of the day's lights, and of the capricious effects of atmosphere. But even in the still moonlight nights, when the bells of the sheep, grazing on the slopes of Euboea, sounded in our tents as if they were but a few feet from the canvas and awakened us, and the owl screeched its shrill and monotonous call, the sight at our feet — the plain, the mountains, the sea, and sky — exercised a spell of beauty unrivaled in any part of the globe.

To the effect of this natural beauty come the historical associations of the spot to intensify the artistic charm; for where can such condensed historical associations, big with man's history, and rising out of the very earth before you and from the remains recovered from her womb, crowd in upon the imagination? They stamp their most characteristic features on your mind in the form of a general artistic mood (which often years of learned reading and thought fail to produce in the scholar), which represents the quintessence and living soul of each past period. And this mood is evoked, not by vague and uncertain and nebulous suggestion, but by the very handiwork of the men who in the distant past produced these remains now restored to the present, — nay, made part of the present and its spiritual life by the pick and spade of the excavator; for the clay moulded, the stones cut, the metal wrought, is now as it was then, and contains the life and the soul infused into them from the worker's hands, now as they did thousands of years ago, —

> . . . "pure crude fact
> Secreted from man's life when hearts beat hard
> And brains, high-blooded, ticked [long] centuries ago."

Standing above the Upper Temple platform, the beholder has before him, immediately at his feet, the remains of the Older Temple, covering, without hiding, vestiges of man's history which preceded by centuries the age of Homer's heroes. Here the descendants of Phoroneus marked the beginnings of man's civilized life in Greece; here the Cyclopean masons built their wall in the times of Proetus of Tiryns. At our very feet stood the temple where the Achaeans worshiped, and where (Dictys tells us) they chose Agamemnon as their leader when they set out for Troy. Hither the sturdy Dorians came, — Temenos and all his clan. Here Phidon set up the symbols which marked an era of wider commerce. At the gates of this temple Cleomenes III. of Sparta in vain sought admittance into the shrine.

And in the glorious age when the Hellenic genius manifests itself in all its lasting splendor, when Athens leads the world, after the Persian host from the east has been driven back, when the figure of Pericles stands forth in shining light and Phidias hallows the Parthenon with the lasting beauty of his sculpture, — then Polycleitus fashions a statue, "the most beautiful of all," for that temple the foundations of which so clearly lie at our feet below the older shrine. One of the buildings at our left was probably erected in the time when Alexander the Great undertook the conquest of the world. On our right the elaborate walls on the lowest level of the precinct were erected by imperial Rome, perhaps when Hadrian presented his golden peacock to the temple. And then we see the early Christians, the Byzantines, and the Frankish and Norman knights take possession of the country, destroy this sanctuary, build out of its ruins the churches you see scattered over the plain, and erect their fortresses at Palamidi and Argos. Then the devasting Turk lays his yoke on the people of the plains. We see the traces of his handiwork in the plain, — Pasha, the village straight before us is called, — and of the army of the great Venetian republic, all transporting building material from this shrine to their mosques or their castellated citadels over yonder. The Venetian rule is succeeded again by that of the Turk; until, in the narrow pass, Dervenaki, up there to the north, in that glorious struggle of the new Greeks for freedom, Kolokotroni annihilates the Turkish host. Argos yonder was once the capital of this young republic. All these stages in man's history, like great earth-ghosts, rise from the land at our feet as we gaze over the plain. Suddenly there is a distant, faint, yet shrill whistle, and we are awakened out of this over-full, dreamlike succession and condensation of historical moods; and here we see, far over the plain, on our right, threading its way along like a centipede, a weird, elongated, moving thing, puffing smoke from its head and rapidly gliding on to Argos.

It is then that we are recalled to the life immediately before us, at our feet; the hundreds of workmen with marked Southern features, in varied and picturesque costumes; the small native horses drawing numerous carts with their rumbling noise, through which the shouts of the drivers pierce, — and all these men speaking the language of ancient Greece, changed and attenuated and abused, but still the tongue of ancient Hellas. Dotted among them are foreign-looking young men, different in feature and garb and tongue, watching over the work. And we ask, Who are these new men, these new Dorians, who speak the foreign tongue? and whence come they, and wherefore? And the answer is, They come from afar, from the land of the setting sun, thousands of miles over the salt sea. But they come not to destroy and conquer, but to restore to the light of day the life that has been buried under that soil for countless ages. And we are overcome by the sense of the great poetic justice, the rightness of things, — that the youngest inheritors of Hellenic culture among the nations should restore to the light of day the oldest sanctuary of ancient Hellas.

THE GEOLOGY OF THE HERAEUM REGION

THE GEOLOGY OF THE HERAEUM REGION

By HENRY STEPHENS WASHINGTON

The geology of Argolis, as compared with that of other parts of Greece, is simple. Argolis is not only, from a geological standpoint, quite recent in formation, but it has also been the scene of much less disturbance than other parts of Greece. None of the rocks exposed date back beyond the Jurassic Period, and there is little of the profound metamorphism which has produced the marbles and schists of Attica, which according to Lepsius[1] are either Palaeozoic or Archaean.

In the present paper it is purposed to sketch briefly the geology of the district immediately surrounding the Argive Heraeum, say within a radius of fifteen kilometres, to examine the agencies which tend to bury ancient remains, and to discuss the site of the Heraeum in the light of the information so gained.

GEOLOGY OF ARGOLIS.[2]

Alluvium. — The geographical and sociological centre of Argolis is the Argive plain, a flat expanse of loose alluvium, roughly triangular in shape, the apex to the north, with an area of approximately 170 square kilometres, and an average elevation above sea level of perhaps twenty-five metres. Near the coast are swamps which apparently are slowly drying up, and which will eventually disappear as marshes or will move seaward. Beyond these, to the north, is a flat, nearly horizontal plain, formed of brown, partly loose and sandy, and partly clayey loam, without stones. Nearer the mountain borders, especially to the east and north, the altitude is higher and the slope greater, and the ground contains many pebbles brought down from the mountains. This pebbly, higher zone extends north of a line curving round from Merbaka to Kutzopodi.

This plain is the latest formation of the Argive district, having been formed in geologically very recent times by the deposition, in a previously existing bay, of sediment brought down from the surrounding mountains. It is difficult, if not impossible, to give even an approximate estimate in years of the age of this plain. Measurements of the rate of deposition along the coast would furnish a basis for calculation, but at present such data are wanting. They would also yield uncertain results, since it is highly probable that the rate of deposition at present is different from, and probably greater than, that of former times. The matter is still further complicated by the fact that the coast along the Gulf of Nauplia probably has been, and is now, sinking. This fact is discussed by Cold,[3] who cites several instances of ancient Greek ruins now lying beneath the sea. He mentions, among others, the site of Lerna, and also refers to a road which led from this place to Nauplia along the shore, which was restored by the Venetians,

[1] Lepsius, *Geologie von Attica* (Berlin, 1893), p. 170.

[2] For the greater part of my information about this region I am indebted to the excellent work of Dr. A. Philippson, *Der Peloponnes* (Berlin, 1892).

[3] C. Cold, *Küstenveränderungen im Archipel* (Munich, 1886), p. 14.

but which now at several places is no longer above sea level, so that without doubt a sinking must have taken place since that time. Whether this sinking is going on at the present day is not known, nor, if so, whether the deposition of sediment is taking place along the shore at a greater rate, with consequent seaward growth of shore line. The latter is probably the case.

At any rate, it is certain that in its general features the Argive plain has changed little in historical times; and although to-day considered one of the most fertile districts of Peloponnesus, the characterization of *πολυδίψιον* given it by Homer (Il. iv. 171) still applies to it. It is probable that, like the rest of Greece, it was once far better wooded and watered than at present, and that it is consequently dryer, sandier, and less well cultivated than of yore, the deforesting of the surrounding mountains not only tending to dry up the streams, but also allowing more rapid and extensive denudation, and a consequent increased deposition of detritus on the plain below.

The Argive plain is drained by several streams, of which only the Erasinos, on the southwest, contains water throughout the year. The others, Dervenaki, Panitza (Inachus), Xerias, and several more of less importance, have for the greater part of the year dry beds, covered with rounded limestone pebbles, not even a brook trickling through them. On occasions, as at the melting of the winter snows or during heavy rainfalls, they become for a few days or hours raging torrents, which, as certain visitors and members of our party have good cause to remember, are awkward to cross. At these times they overflow their low banks, and cover considerable areas of the surrounding land with mud, sand, and pebbles.

Neogene. — Bounding the Argive plain on the north is an area of conglomerate belonging to the Late Tertiary (Neogene) Period. This is a southerly extension of the Tertiary belt which stretches along the north coast of Peloponnesus as far as Pylos. The Tertiary is the period preceding the present or Quaternary, and the fossils found in the Late Tertiary indicate (for Europe, at least) a climate and set of conditions less tropical than during the Early Tertiary, and more nearly like those prevailing at present. The road from Corinth to Argos, as far as Phichtia, runs through deposits of this age, and in it are excavated the beehive tombs of Mycenae. The rock south of Nemea is chiefly a coarse conglomerate formed of limestone pebbles imbedded in a fine calcareous cement. The same rock is found at the foothills traversed by the path which leads from the Heraeum to Mycenae.

Eocene. — The lower flanks of the Arcadian Mountains, bounding the Argive plain on the west, are composed of a very fine-grained, light-colored limestone, which splits readily into slabs. This limestone (the *Olonos-Kalk* of Philippson)[1] underlies Neogene conglomerate to the north, and belongs to the Early Tertiary Period, when the climate of Greece was far more tropical than now. The hill crowned by the ancient citadel of Argos (Larisa) is composed of this limestone.

Cretaceous. — To the east of the Argive plain we meet with the oldest rocks of this region, — limestones, shales, and sandstones of Lower Eocene, Cretaceous, and possibly Jurassic age. The slopes from east of Merbaka southward to about Nauplia are composed of shales and sandstones (Philippson's *Lygourio-Schiefer*),[2] which dip to the south.

Northward as far as Hagios Vasilios, on the railroad, and eastward to the Gulf of Aegina, the mountain masses of Hagia Trias, Tzernikelo, Trapezona, and Arachnaeon are

[1] *Op. cit.* pp. 400 ff. [2] *Op. cit.* pp. 53, 390.

composed of a gray, compact, fine-grained limestone. This limestone, which underlies, and hence is older than, the Lygourio shales, is referred by Philippson[1] rather doubtfully to the Jurassic Period, and the Lygourio shales to the Lower Cretaceous. Lepsius[2] thinks that it is Cretaceous. Owing to the paucity of good fossil remains, the question is difficult to decide definitely, but I am inclined to agree with Lepsius as to its age, especially on the ground of its petrographic resemblance to the Cretaceous limestones of Attica and the similar occurrence of gabbros and serpentine, which are found in several places breaking up through the limestone.

Geological History of the Region. — During Cretaceous and Eocene times the region which now forms the Argolic Peninsula was beneath the level of the sea, and the beds of limestone were being accumulated largely through the growth of marine organisms on the shallow and slowly sinking sea-bottom. The accumulation was aided by the deposition of sediment brought from then existing land areas near by, which have in part disappeared through denudation and subsidence, and in part are left on the mainland of Greece and in the Cyclades.

In Post-Neogene time there was an elevation of this area, and the immense mass of rock which had been forming and hardening for ages beneath the sea was raised slowly many thousand feet into the air. This elevation, though gradual, was the means of still further consolidating the rock-mass through pressure and partial metamorphism, and was accompanied by much cracking of the crust.

Indeed, the Aegean Sea and the surrounding countries have been the scene of so much disturbance that the whole region is, as Cold puts it, crossed by a "network of cracks." One of the most important of these is that which, beginning at Cos, curves round through Santorini, Melos, and Aegina to the Isthmus of Corinth, and thence along the Gulf of Corinth. It is on part of this line that the Greek volcanoes have been formed. In fact, it is to these cracks that the main configuration of these Aegean countries is due, with their lines of islands and peculiar coastal features.

Only two of these fracture-lines, however, concern us. One is the volcanic line already mentioned, which cuts off Argolis abruptly on the east, and on which we find the volcano of Methana, the small eruptive mass of Poros, and the small outflows of dacite near Kalamaki. The other is that which runs in a southeasterly direction from about Phlius, through the Argive plain and out into the Gulf of Nauplia. This latter separated the massif of Argolis from that of Arcadia.

As soon as the Argolic massif had been raised above sea level, it became subject to the destructive effects of the atmosphere, rain and wind, heat and frost, which agencies are constantly tending to reduce all elevations of the earth's surface to a so-called base level, which would be eventually (if other forces did not come into play) that of the sea. The rain fell on the upraised surface of the old sea-bottom, and dissolved it and washed it off. The heat of the sun and the frost of winter split up the rocks, and vegetation springing up aided the disintegration. The surface material was washed seaward, the rainfall gradually forming regular channels for itself, as one can see in miniature on a sandy road after a heavy rain.

The main lines of drainage would be determined by the two fracture-lines, which would offer channels for the drainage, and which would be the parts toward which the surface water would flow. Toward these, then, the small streams made their way, gradually widening and deepening their own channels and cutting back farther and farther

[1] *Op. cit.* p. 390. [2] *Op. cit.* p. 81.

into the limestone massif. This was consequently cut by valleys sloping toward the fault lines, and the ridges between them were subject to the same changes through the action of smaller streams tributary to the first. An examination of Philippson's topographical map of the region will reveal traces of the course of events, though subsequent erosion is the cause of some obscurity.

In this way the main topography of the mountains has been carved out by running water, and they themselves were subject to the same unceasing forces till their sides were furrowed and their spurs in many cases were cut off from the parent mountain. It was on such a spur, isolated by erosion from the mountain mass of Hagia Trias, that the Temple of Hera was built.

The site is near the top of a small eminence, roughly triangular in shape. The apex is toward the mountain to the north, from which it is separated by a deep valley; this, coming down from above, forks at the Heraeum hill. The ravines on either side, the ancient Eleutherion and Asterion, are gullies in the limestone, generally dry, but occasionally flowing with rain-water. Toward these and at the apex, the sides of the hill are precipitous, with talus and earth-slopes below. The surface of the hill slopes somewhat steeply down from the apex toward the plain, the slope being broken by two terraces, on which the two temples lay. At the top the gray cretaceous limestone of the mountains crops out in abundance, but below it is hidden by deposits of earth, part of which lie beneath the temples and other buildings, and part of which serve to cover and preserve the remains.

It is to the consideration of the accumulation of this protective mantle that the following pages will be devoted.

BURIAL OF ANCIENT REMAINS.

The questions of the methods by which soil and other materials accumulate over ruined buildings, and the sources whence the material is derived, are often of great interest. Little, or nothing, so far as I am aware, has been written specially on this subject, so that it may be not without interest to the archaeologist to discuss the matter in general, pointing out the various agencies that may contribute to the result. I feel that this may be especially useful, since I was often asked during the excavations how so much soil could collect on the surface of the isolated hill on which the temples stood.

The various agencies by which, in the course of time, ancient remains are covered up may be grouped under two main heads, *inorganic* and *organic*. Each of these may be further subdivided, but it must be understood that in the great majority of cases the process is complex, and that more than one of the various agencies have been active. It is also to be remembered that the conditions of the site, topographical, geological, and meteorological, as well as the surrounding fauna and flora, and its relations to war and later occupation, are the complex factors which determine the processes involved at any site.

Inorganic Agencies. — The two principal inorganic agencies which tend to bury objects lying on the surface of the ground are wind and water, and of these let us consider first the wind, this being that which has been chiefly involved at the Heraeum.

Wind. — The action of the wind in raising and transporting dust and sand is a matter of common observation on any dry, windy day, but it is only on further consideration that its importance from this point of view is recognized. Although the air is 813

times lighter than water, and its carrying power consequently far less, yet, owing to its greater velocity of motion, its power of transporting material of certain kinds is fully as great. On an average the largest sand grain which can be sustained by ordinary winds is only 0.1 mm. in diameter,[1] so that the material transported by wind is naturally only the finest in grain. It must also naturally be dry. Furthermore, since the raising of dust into the upper layers of the air, where velocities are greater, is greatly facilitated by gusts, swirls, and eddies, its transportation will be facilitated by conditions tending to produce these. Hence, as Udden says, "the conditions favoring wind erosion are a dry climate and a topography of abrupt and broken reliefs."

It will be seen that the climatal and topographical conditions of Greece and especially of the Heraeum site are highly favorable to wind transportation. There is the dry, dusty plain surrounded by mountains, the former supplying the material and the latter aiding by rendering the normal winds gusty and irregular. It was by no means uncommon to see from the excavations the clouds of sand and dust drifting across the plain below, and the amount of dust raised by the winds from the excavations themselves was at times a serious annoyance.

As to the deposition of the dust so raised, it is evident that, since its transportation depends largely on the velocity of the winds, anything tending to check the motion will tend to deposit its earthy burden. Objects projecting above the surface will do this, so that any ruins will become a nucleus for aeolian deposits (as they are called) on a small scale. The growth of grass and bushes will also have the same effect, and the growth about ruins is facilitated by the presence of the fine aeolian deposits, which, through the selective action of the wind and other causes, are richer in plant food than the soil they are derived from, and where also such material is in a more easily assimilable condition. The application of these remarks to the Heraeum will be deferred to a later page, but attention may be called to the calculation of Lanciani [2] that dust (largely wind blown) accumulates on the floor of the Forum of Trajan at the rate of an inch a year, or over eight feet in a century.

In this connection may be mentioned, for the sake of completeness, the burial of buildings and towns in Holland and elsewhere by sand dunes. In this case, however, the motion of the dunes is a rolling one, the wind blowing the back and top layers of sand continuously forward, so that the dune moves bodily forward as a whole through the motion of its component particles.

Water. — The action of water in burying ancient remains is of the highest importance, and takes place in several ways.

Rain falling on sloping surfaces of earth tends to wash the loose surface matter downward, and hence to bury objects which lie at the bottom of the slope. Rivers and brooks carry enormous amounts of sediment down from higher to lower levels, where part of the material is deposited, the rest passing out to sea or being deposited on the bottoms of lakes. Low-lying sites in river valleys and on plains at the foot of mountains are especially apt to be buried by such means.

This action of rivers is greatly aided by the occurrence of freshets, where the stream, much increased in volume and velocity, and hence carrying far greater loads of sediment than usual, spreads far from its banks and deposits material over areas which the normal flow never reaches. A well-known instance of this is the site of Olympia, which was covered largely by material brought down by the Cladeus and deposited in

[1] J. A. Udden, *Journal of Geology*, II. (1894), p. 322. [2] Lanciani, *Ruins of Ancient Rome* (1897), p. 99.

times of flood. A similar action, aided by the detritus washed downward by the rain, is seen at Sardis, which is buried to a great depth by the deposit of sediment from the overhanging heights of Sart Kalessi, the ancient Acropolis. This height is composed of loose, crumbling, sandy marls, which are easily washed away, not only by brooks but by falling rain. To such an extent has this erosion taken place that the mountain crest is a mass of fantastic pinnacles and turrets, and of the ancient Acropolis but a very small part remains. The rest is gone to bury the city at its base, thus preserving the dead remains of what it protected in life.

In the case of sites near the seashore and at the mouths of large rivers, under certain conditions the sea is a prominent factor, causing a deposition of sediment where the river current is checked on entering the sea, gradually closing up harbors, forming deltas, and adding to the land. Ephesus and Miletus are prominent examples of this class.

Another agency in which water plays an important part are landslides. Here the water acts by loosening strata or by lessening the friction between two layers of earth or rock, so that large sections of a mountain-side may slip suddenly down, overwhelming all that lies in their path. Instances of this will be recalled by any one who has visited Switzerland, and landslides from Mount Cronium aided materially in burying Olympia.

Finally we must note the deposition of carbonate of lime or travertine, etc., from solution in water. This action is extremely local and of little importance in classical archaeology, though in the case of cave deposits it has been the means of preserving for us most important remains of prehistoric man.

Volcanoes. — As a final inorganic agency may be mentioned the action of volcanoes which bury sites at their bases, not only by lava streams, but by flows of mud and by the ejection of immense quantities of ashes and scoriae. Pompeii and Herculaneum will occur to every one in this connection, and the prehistoric remains of Santorini may also be cited.

Organic Agencies. — Of the organic agencies, man is by far the most important, at least in the region of classical archaeology. The superposition of one building on the remains of an older, the growth of a new settlement on the site of an older one, the general use of mud brick for private houses in antiquity, the immense accumulation of stone, brick, earth, mud, and rubbish of all kinds wherever man abides, are exemplified at Troy, Nineveh, Athens, Rome, in fact, wherever the excavator's pick has penetrated.

This mode of burial is in many respects the best known to archaeologists, partly through its obvious features, and partly through the importance of the superincumbent artificial masses. It is needless to enlarge on this factor, but reference may be made to the striking remarks by Lanciani[1] on the burial of Rome.

Of other animals than man only one, the h[illegible]ble earthworm, constitutes a factor of any importance. This animal brings up earth from its burrows and deposits it at the surface in the form of the familiar worm-casts. In one of his shorter but very interesting books Darwin[2] devotes much space to the development of the theory that worms are to a large extent responsible for the burial of small objects lying on the surface of the ground, and even of ruins. He gives several instances of the pavements of recently excavated Roman villas in England being gradually buried beneath such deposits and slowly sinking. Though Darwin is perhaps inclined to attribute to the worms more

[1] *Op. cit.* pp. 98 ff. [2] *Vegetable Mould and Earthworms.*

than their fair share in these cases, yet the effect is undoubted. While the rate of deposition of worm-casts, and consequent subsidence and burial, is very slow, yet these animals form a factor not to be entirely overlooked in considering the subject.

In addition to the animal organisms, plants must not be forgotten, since they aid very materially, not only by acting as wind-breaks and consequent dust-gatherers, but also through the accumulation of matter by their death and decay. They also promote the preservation of buried remains by binding the soil together, so that wind and rain have less opportunity for action in removing it.

THE HERAEUM SITE AND ITS BURIAL.

In taking up the site of the Heraeum more in detail, it must be recalled that the temples are situated on a spur of Mount Hagia Trias, which is cut off from the main mass by a deep erosion valley. As has already been said, this hill is largely composed of gray limestone, which lies close to the surface at the upper part, north of the old temple. As the rocky surface sloped too steeply, the massive Cyclopean retaining wall was built for the support of the Old Temple platform, which was probably largely artificial. Below this no limestone was met with in the course of the excavations, and it is rather uncertain to what extent the slope is natural. From the fact that layers of gravel were met with at low levels in several places, we can infer that much of it was part of the old mountain slope, while in other places there has been extensive filling in before the construction of buildings. Covering all the remains of buildings was a layer of soil and earth, which varied in depth from about half a metre over the Old Temple to four or five along the south and west slopes, especially against retaining and back walls.

This soil is of course subsequent to the destruction of the buildings, and it will be not without interest to see whence it was derived.

The existence of the deep erosion valley back of the hill precludes the possibility of any wash of earth from the mountain slopes above. It was also evident from the results of the excavations that there had been no settlement, at least of any size, on the hill since the abandonment of the site as a place of worship of Hera. In this respect it differs radically from such sites as those of Troy and Plataea. This is due partly to the fact that the site, at least since the earliest primitive times, was never a place of residence, but only of worship and pilgrimage, and partly, also, because the hill was of little or no strategic importance, as was that of Plataea. In some respects, from the excavator's standpoint, this is a misfortune, since not only would the accumulations of a settlement have aided in preserving the ruins, but also the use of the site as a quarry would have been localized, and the blocks and other objects would not now be scattered far over the Argive plain.

The main agency involved, then, must be attributed to the wind, as has been already mentioned, the material being derived from the mountain above, and still more from the plains below. These aeolian deposits were never of great thickness, except against steep slopes and in hollows. This is to be expected, in view of the small area of the hill and the lack of abundant vegetation. Trees are entirely absent, and, except for a few thyme bushes, the only vegetation is short, coarse grass and plants of no greater height.

Worms may have played some part in the process, but in all probability only to a small extent. As far as I can recall, worm-casts were very rare on such surfaces as that of the

cleaned-up platform of the Old Temple, and the accumulation of soil which necessitated an occasional sweeping for visitors was practically all wind-borne dust from the plain or from the excavations.

In this connection there may be described a somewhat striking instance of what may be called archaeological geology, especially since it throws some light on the methods of the old builders.

The back of the South Stoa, which is several metres below the level of the Second Temple, is a wall of blocks of *poros* stone,[1] which measures about 30 cm. in height. As this building was uncovered in 1894, a steep bank, some 4 metres deep, was left for a time behind it. In this section, at the west end, immediately behind the space where formerly were the upper courses of the back wall of the stoa, there were seen five narrow (2 to 3 cm.) parallel and horizontal stripes of white earth, standing out clearly against the brown earth background. The accompanying figure, drawn from a sketch and measurements made at the time, shows the state of affairs.

Examination of the thin white strips showed that they were composed of the dust of *poros* stone, mingled with some chips of the same. The earth between them varied somewhat in character. At the bottom was red clay and loose gravel, in which were found some objects of bronze and a small grave, lined with rough stones, containing a skeleton and the Mycenaean vases described elsewhere. Above this is about 1 metre of blackish earth, overlaid by 4 cm. of yellow earth. Then follows 75 cm. of earth with some gravel, and above this, in alternate order, three 2 cm. layers of *poros* dust and three (25 to 30 cm.) of solid brown earth, the last of these being overlaid by 3 cm. of *poros* dust. Above this the relations are somewhat complicated by the presence of oblique strata of gravel, but we have here also 50 cm. of earth, 3 cm. of *poros* dust, again 50 cm. of earth, and then the surface of the previous year's excavation, on a level with the foundations of the Second Temple.

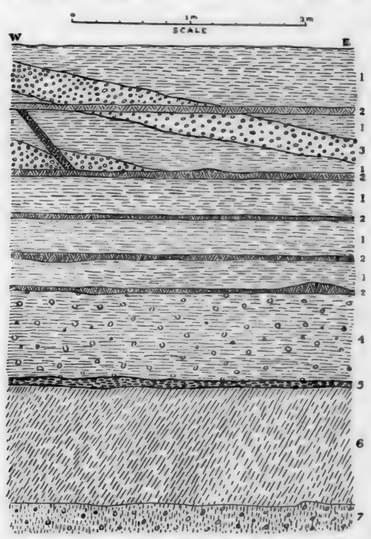


FIG. 45a. — SECTION BACK OF SOUTH STOA, 1894.
Explanation: 1, Soil. 2, *Poros* dust. 3, Gravel. 4, Soil with some gravel. 5, Yellow earth. 6, Black earth. 7, Red clay and gravel, with grave.

Here is an instance of archaeological geology, which tells a story. In the first place the red clay and gravel at the base of the section, and in which the grave was found, is evidently subsoil, existing prior to settlement at the locality, while the black earth which covers it is the old surface soil. *Poros* stone is quite foreign to the locality, and the presence of layers of this can only be attributed to the agency of man, and derived from material used in construction, presumably that of the back wall of the stoa, which is constructed of this stone. It will be observed that the layers of earth are each about 25 cm. thick, or multiple of this by two or three.

The hypothesis which accounts best for these facts is as follows: When the stoa was to be built, it was necessary to cut away some of the bank behind it, about down to the old soil. In this, the first few courses were laid in a trench, as foundation blocks. Above these, three courses of blocks were laid, which would make the height about as great as a man could work comfortably. Earth was then thrown in behind, and the blocks for the next course worked into shape, the dust from this making the first thin *poros* layer. One course was laid, earth filled in, and more blocks worked, and so on, the space behind being filled in sometimes after one and sometimes after two courses. The sloping bands of gravel in the upper part are somewhat more difficult of explanation, but are probably derived from earth thrown out of some excavation near by, forming talus slopes. This was possibly that of the West Building, since the direction of up-slope is toward this.

[1] This is a soft whitish travertine, extensively used for building in Greece. It derives its name from one of the localities in which it is found.

NOTE ON THE IGNEOUS ROCKS FOUND IN THE EXCAVATIONS AT THE HERAEUM.

During the excavations at the Heraeum site a number of rough, as well as worked, pieces of igneous rock were met with. Since, as has been previously explained, the only rocks occurring in the immediate vicinity are limestones and shales, it is evident that these igneous rocks were brought from a distance, and it is believed that a study of them might throw some light on their possible places of origin.

The writer accordingly brought home a number of representative pieces, none of any archaeological value, *per se*, and has studied them by the ordinary petrographical methods, the results of which are here briefly given. Since but a small amount of space can be devoted to this topic, which is rather foreign to an archaeological volume, no explanation of the technical terms employed has been attempted, and, to the archaeologist, only the few conclusions which may be drawn will be of immediate interest. The specimens are grouped according to their petrographical characters.

Gabbro. — With the exception of one unworked piece, all the specimens of this rock are represented by so-called "hammer-stones." These are cuboidal in shape (i. e. cubes with rounded edges and angles), which vary in diameter from 3.5 to 7.5 cm., and in weight from 150 to 400 grms. The surfaces are smoothed but not polished, and in some cases rather rough and pitted from incipient weathering.

The use of "hammer-stones" was, as the name implies, for pounding, either taking the place of our modern hammer, or as a pestle for reducing grain to meal. For this purpose a hard, tough material is essential, and this quality being characteristic of the gabbros, this rock is highly suitable for the purpose.

Hammer-stones are very commonly found in prehistoric deposits in all parts of the globe, having been evolved from the primitive, naturally rounded pebble. Their relative abundance at the Heraeum, as well as at Plataea (where I also met with numbers of them) and at other Greek sites, would indicate that they were in common use among the Greeks down to a quite late date. It would be of interest to collect and study all the facts available as to their occurrence at Greek sites, since the apparent survival of such decidedly primitive implements among a people in such a high state of culture is striking. It seems possible that this may have been the result of their use in religious ceremonies, e. g. for preparing the meal for sacrifices, just as the flint knife was used in sacrificial ceremonies in many countries long after the knowledge of bronze and iron had become general.

A number of those found show signs of wear by the presence of an especially rough surface or chipped edges, while others which present a very smooth, almost polished face, indicate that they

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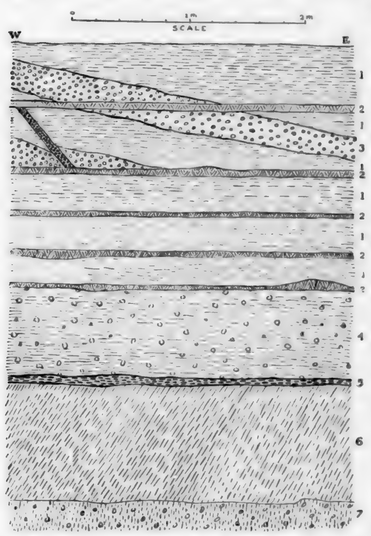


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A number of those found show signs of wear by the presence of an especially rough surface or chipped edges, while others which present a very smooth, almost polished face, indicate that they

were used as grinders or rubbers for making meal, just as similar implements are employed at the present day by the Mexican Indians and other peoples. One specimen even showed signs of both uses, having its largest face quite smoothly rubbed, but with rough depressions in the centre, as if it had also been used as a hammer against a chisel or other hard metallic instrument.

Gabbros are rather frequently met with in the eastern part of Greece, having been described as coming from Euboea, Attica, and near the Isthmus of Corinth. As I met with one or two masses of this rock cutting the limestone near Mycenae, it is probable that the material of these hammer-stones comes from the neighborhood of the Heraeum, and that they were of home manufacture.

Petrographically these gabbros offer no especially noteworthy features. They are somewhat coarse-grained, and under the microscope are seen to be rather ophitic in structure, some of them being almost true diabase. They are composed of automorphic, rather basic labradorite, pale diopside, and occasionally diallage, which are frequently uralitized, with some magnetite. A little orthoclase is sometimes seen, which may be connected with the tendency of many of the rocks of the eastern part of the Mediterranean basin to a monzonitic character. In general they correspond with some of the descriptions of Becke and Lepsius of Euboean and Attic gabbros, though no tendency toward glaucophanization of the pyroxenes was observed.

Felsite Porphyry. — Several rounded, waterworn pebbles and fragments of two hammer-stones composed of a dense green felsite were found. These are all more or less porphyritic, the phenocrysts being entirely of an apparently alkaline feldspar. In one or two instances there is a well-defined flow structure in the apparently originally glassy base. But all the specimens examined are thoroughly devitrified, the feldspars having lost their transparency, and the base being changed to the usual very finely granular, cryptocrystalline aggregate.

These porphyries are somewhat similar to the well-known labradorite-porphyry of Laconia (*verde antico*), though the phenocrysts are by no means as prominent or numerous, the color is much lighter, and the feldspars are apparently alkaline rather than a basic plagioclase, but in their present altered condition this point can be decided only by a chemical analysis.

It seems scarcely likely that the pebbles would have been brought from any considerable distance, and they may possibly have been brought down by torrents from dikes in the neighboring limestone, and this, possibly, is also the origin of the material of the two hammer-stones. While it would not be surprising to find dikes of such rock in the region, yet it must be remarked that I met with none such in my tramps about the district, and that none were noted by Lepsius. A fragment of a similar felsite was found by me on the north coast of Aegina, where it almost certainly was not derived from the island itself, and it seems possible that the peculiar color of these rocks may have been the cause of their transport from a distance.

Andesites. — The specimens representing these rocks were with few exceptions rough fragments of various sizes. Apart from these, one rather large oval slab was found, with a depression in the centre, apparently a rough mortar for grain, as well as a fragment of a rather thin flat corn-grinder, marked on one side with parallel grooves.

These andesites vary from rather coarse to fine grained in texture, one or two being quite dense and vesicular. They are all hornblende-andesites, showing well-formed phenocrysts of yellowish brown or brownish-green hornblende, a little greenish biotite, and a rather basic andesine or acid labradorite, in a dusty glassy groundmass, which is hyalopilitic with microlites of the same minerals.

With one exception they are closely similar to the hornblende-andesites of Aegina, and it seems reasonable to suppose that the blocks were brought from that island. This, at least, is the nearest locality, though closely similar rocks are met with at Melos and on the west coast of Asia Minor.

The only exception is the corn-grinder, which differs from all the andesites of Aegina, Methana, Melos, and Asia Minor that I have studied. There seems to be some reason[1] for thinking that this came from the small island of Nisyros (off the coast of Asia Minor north of Rhodes), which was, according to Strabo,[2] noted for its millstones.

Obsidian. — A number of flakes and "cores" of a black obsidian were found, which are exactly like those found during the excavations at Plataea. Under the microscope they show a well-marked

[1] Cf. H. S. Washington, *Journal of Geology*, III. (1895), p. 73.

[2] Strabo, X. 5–16.

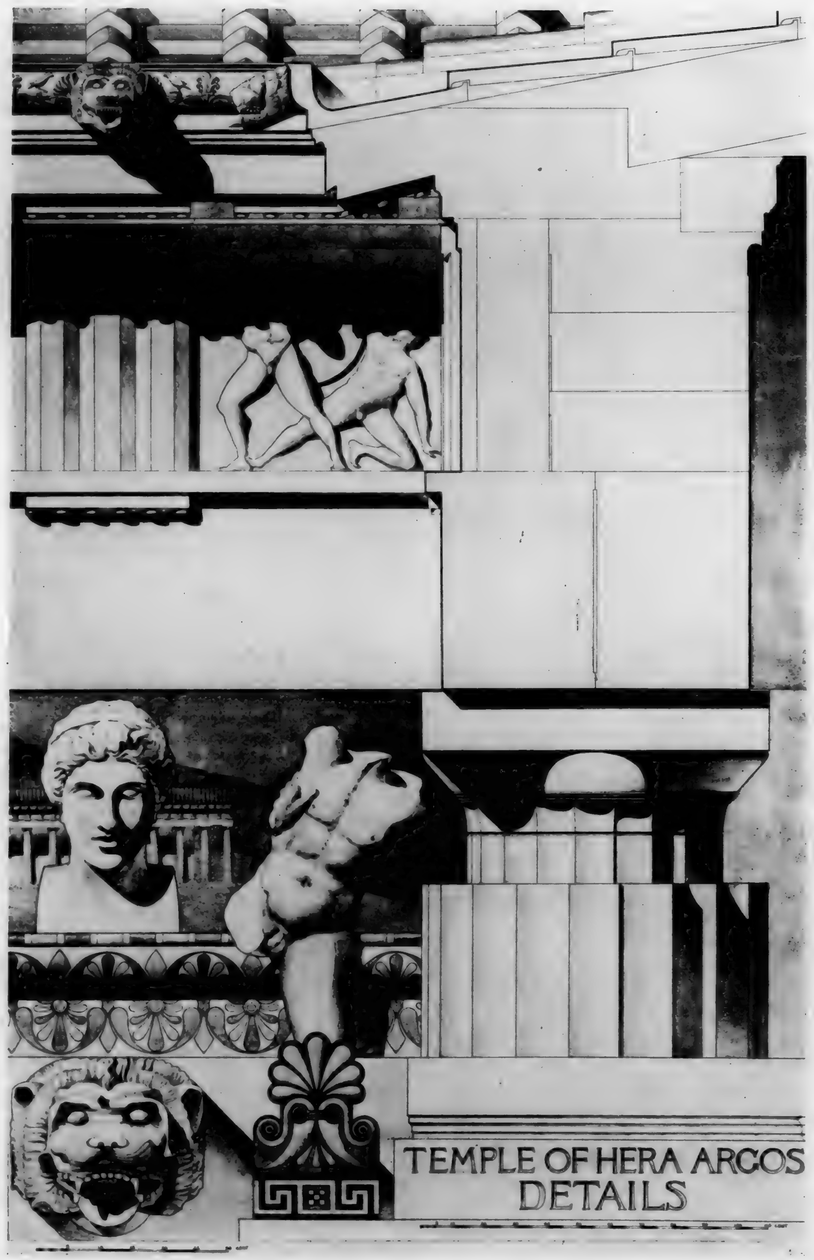
flow structure, occasionally banded (eutaxitic), but without phenocrysts of any kind, the flow structure being brought out by the numerous globulites and other excessively minute bodies scattered through the mass. Apart from the colorless glass the only constituents are small microlites of magnetite, diopside, and feldspar, which last is often in pretty skeletal forms.

No such obsidians have been found in the neighboring Aegina and Methana, but closely similar volcanic glasses are met with on Melos and Santorini (Thera), and it is highly probable that one of these islands is the place of origin for these specimens.

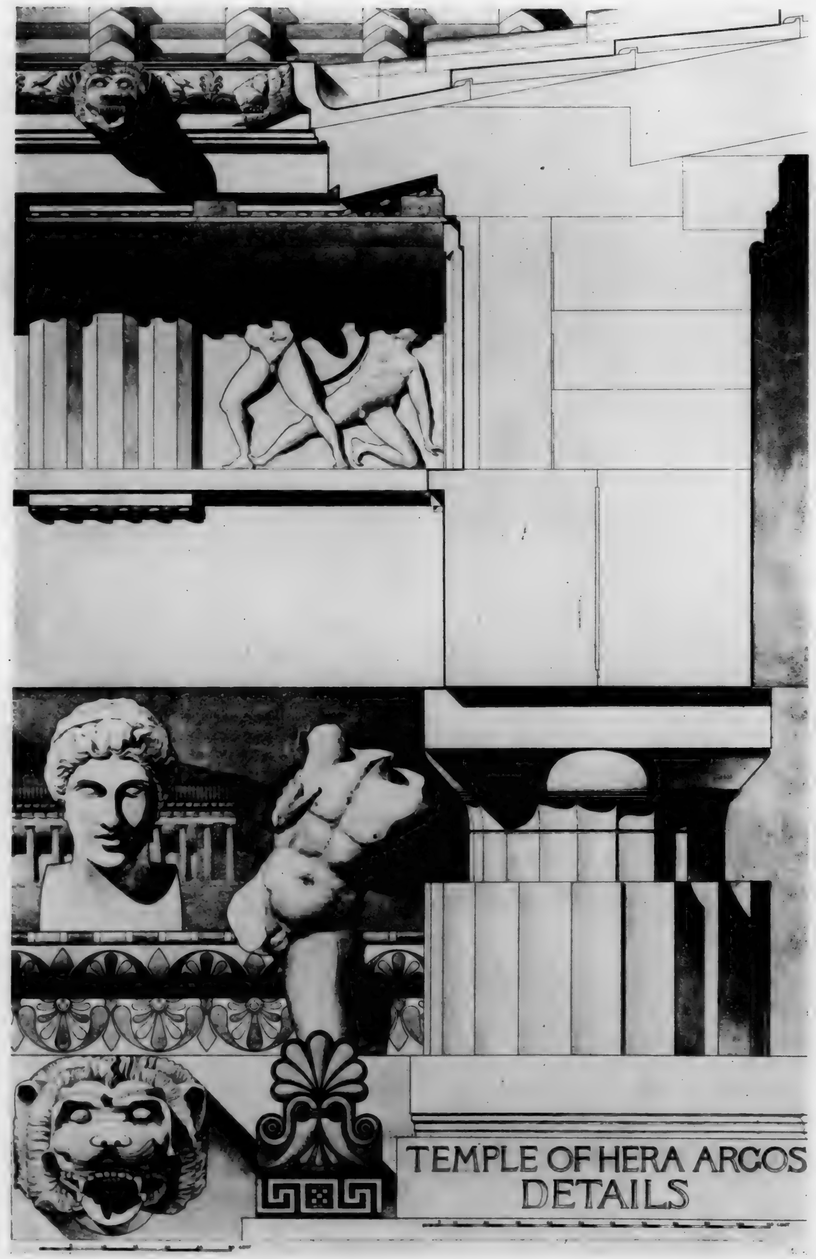
One or two obsidian arrowheads were found at the Heraeum, and it is possible that the flakes and cores are the remains of the manufacture of these, or possibly of knives for some sacred use. The occurrence of these flakes and stone weapons is in line with that of the primitive hammer-stones, all of them belonging anthropologically to a much earlier period of development than that of their place of discovery.

ARCHITECTURE OF THE ARGIVE HERAEUM

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ARGIVE HERAEUM. — DETAILS OF THE SECOND TEMPLE, AND CYMA-MOULDINGS FROM THE SOUTH STOA



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The Argive Heraeum was at a very early time a place of high importance in Greece, and its architectural remains silently indicate that it continued to be a religious centre for many centuries. The buildings themselves have indeed been entirely destroyed, but it is still possible to piece together the fragments into a whole which may in a measure simulate the original, to restore as a result from excavations the temples, porticoes, and other buildings of the famous sanctuary of Hera.

TOPOGRAPHY[1] AND SURVEY.

The Argive plain consists chiefly of an alluvium deposited during the course of ages. It comprises an approximate area of one hundred square miles, extending from the Gulf of Argos northerly about ten miles to the entrance of the gorge of Mycenae, and



Fig. 46. — Argive Heraeum: View from the north.
Showing in the distance the hills back of Nauplia. The rocky eminence in the foreground is northeast of the Old Temple.

as many miles east and west. This exceptionally flat expanse of country is bordered on three sides by low foothills, beyond which roll higher hills and mountains like petrified waves northward toward Corinth, eastward toward Epidaurus, and westward until they blend with the mountains of Arcadia. The first ripple into which the plain breaks on

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the north rises about five hundred feet (152 metres) above the sea level, and the beauty of the site is sufficiently attested by the fact that the Greeks chose it for the sanctuary of Hera (PLATES II., III., Figs. 46, 47, 48).

Fig. 1 (p. 7) is a map of the Argive plain based upon Steffen's map of the Argolid given in his *Karten von Mykenai*, 1884. The site of the Heraeum is indicated upon it by a small rectangle which is enlarged and shown in detail in the upper right-hand



FIG. 47. — ARGIVE HERAEUM: VIEW OF THE SITE FROM THE EAST.
The rocky eminence is the same as shown in Fig. 46, below which the tents of the excavating party are pitched. In the centre of the picture is the Cyclopean wall which supports the Old Temple terrace; next, to the left, is the Second Temple platform; then the *phylakeion* and the slope to the South Stoa. The retaining walls of the East Building are visible near the centre of the picture and in about a line below the Cyclopean wall. The tilled ground in the foreground is shown on PLATE IV.

corner of the illustration.[1] Again on this enlarged plan is shown, by a small white square, the position of the entrance to the tunnels or subway aqueducts which are referred to by Dr. Waldstein in the General Introduction (pp. 14 ff.).

The Heraeum lay approximately three miles southeast by south from Mycenae,[2] four and one half miles northwest from Midea, six miles north-northwest from Tiryns, eight miles north-northwest from Nauplia, and four and one half miles northeast from Argos. The site is shielded on the north and northeast by the mountain peaks of Euboea and Hagios Elias (Berbatiotikos), which tower in heights that vary from one to two thousand feet above the level of the gulf. PLATE IV. is a general map of the site of the Heraeum showing the present condition of the ruins after excavation. The map is drawn on a true north and south axis, the variation of the compass needle being 6° 43′ west of true north when this survey was made in April, 1895.[3]

[1] The small Roman numerals on this larger rectangle are the same as in PLATE IV., and are explained in the legend of this Plate. They are also used throughout this chapter, and elsewhere in this publication.

[2] Pausanias, II. 17: "To the left of Mycenae, at a distance of fifteen furlongs (stadia) is the Heraeum" (Frazer's translation). As a stadium was about 600 feet, Pausanias's statement would make the distance 9000 feet, or less than two miles.

[3] To survey the site I began on the rising ground north of the Old Temple and placed the theodolite on the spot indicated on PLATE IV. by a circle and cross-lines. The direction of true north was obtained as follows: Thursday, April 4, 1895, at midnight and four minutes I sighted Polaris with the star Alioth in line above it. Waiting until 12.28, I sighted the north star alone and marked the spot (No. 1) under the plummet of the instrument, and another (No. 2) under a plummet depending from a pole 1.35 m. from No. 1, and then placed a pin at a point (No. 3) in line with No. 1 and No. 2, and 5.48 m. from the former. Friday morning, April 5, I fastened a taut string along the line 1, 2, and 3, and another string from No. 1 in the direction of the compass needle. Then sighting each string in turn through the theodolite, I read the degrees of variation as 6° 43′ west of true north.

From this station-point of the instrument I found the direction of one peak of Mount Euboea to be 30° 32′ east of true north, and its elevation above the horizon 18° 8′. Another peak was 27° 53′ north of east and elevated 12° 41′. Mount Arachnaeum was 18° 37′ south of east and elevated 2° 55′. Directly south was the island Bourzi, near Nauplia, with its water line 0° 51′ below the horizon. Directly west the mountain summit was elevated 2° 38′. From the first station-point of the theodolite I ran a line due south, and from this erected verticals east and west as base lines and obtained the angle that the ruins of each building made with the base lines. The running measurements were made with a steel metric tape, wherein I was assisted by Iohannes, a little Greek boy from Chonica.

The extent of the site occupied by the construction is about 500 m. north and south by 1000 m. east and west. The difference in levels between the highest building (the Old Temple, I) and the lowest building (Stoa X) is 29.34 m., as is shown by the table in the text (p. 108). When measuring the ruins my primary object was not to formulate any theories, but to obtain exact data, and to this end I made careful running measurements of the joints of every accessible stone in the ruins of each building and made drawings of each to the scale of one centimetre to the metre, verifying all to insure accuracy. I next measured and drew to a larger scale plans, elevations, sections, and isometric perspectives of all the loose stones and architectural fragments found on the site, 310 in all, and made full-size drawings of all capitals to obtain their exact profiles, and of the ornamental details, e. g. lions' heads and cyma-mouldings, and gave to each of the 310 fragments a number in order to facilitate reference. Finally, I made colored drawings of the terra-cotta fragments and water-color sketches of the landscapes.

The method of procedure is described in full to show that, notwithstanding the lack of expert assistance and of fine measuring instruments, a careful endeavor was made to obtain exactly all the data yielded by the site. The results are now presented to the reader, who is thus furnished with all the materials, and can make his own restorations of the buildings should he disagree with the deductions of the author.

It may be well to note here that the shadows on all of the drawings are projected at 45°, thereby enabling one to determine the height of an object by the width of its shadow on the plan, and the projection of an object by the height of its shadow on the elevation.

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FIG. 48. — ARGIVE HERAEUM: VIEW OF THE SITE FROM THE WEST.
The men are excavating the Lower Stoa (X).

rendered it a convenient quarry for later builders, and the mediaeval churches on the plain and the fortresses on the adjacent hills have been largely constructed of stones

[1] Cf. Dr. Waldstein's Introduction, p. 15.

the north rises about five hundred feet (152 metres) above the sea level, and the beauty of the site is sufficiently attested by the fact that the Greeks chose it for the sanctuary of Hera (PLATES II., III., Figs. 46, 47, 48).

Fig. 1 (p. 7) is a map of the Argive plain based upon Steffen's map of the Argolid given in his *Karten von Mykenai*, 1884. The site of the Heraeum is indicated upon it by a small rectangle which is enlarged and shown in detail in the upper right-hand



FIG. 47. — ARGIVE HERAEUM: VIEW OF THE SITE FROM THE EAST.
The rocky eminence is the same as shown in Fig. 46, below which the tents of the excavating party are pitched. In the centre of the picture is the Cyclopean wall which supports the Old Temple terrace; next, to the left, is the Second Temple platform; then the *phylakeion* and the slope to the South Stoa. The retaining walls of the East Building are visible near the centre of the picture and in about a line below the Cyclopean wall. The tilled ground in the foreground is shown on PLATE IV.

corner of the illustration.[1] Again on this enlarged plan is shown, by a small white square, the position of the entrance to the tunnels or subway aqueducts which are referred to by Dr. Waldstein in the General Introduction (pp. 14 ff.).

The Heraeum lay approximately three miles southeast by south from Mycenae,[2] four and one half miles northwest from Midea, six miles north-northwest from Tiryns, eight miles north-northwest from Nauplia, and four and one half miles northeast from Argos. The site is shielded on the north and northeast by the mountain peaks of Euboea and Hagios Elias (Berbatiotikos), which tower in heights that vary from one to two thousand feet above the level of the gulf. PLATE IV. is a general map of the site of the Heraeum showing the present condition of the ruins after excavation. The map is drawn on a true north and south axis, the variation of the compass needle being 6° 43′ west of true north when this survey was made in April, 1895.[3]

[1] The small Roman numerals on this larger rectangle are the same as in PLATE IV., and are explained in the legend of this Plate. They are also used throughout this chapter, and elsewhere in this publication.

[2] Pausanias, II. 17: "To the left of Mycenae, at a distance of fifteen furlongs (stadia) is the Heraeum" (Frazer's translation). As a stadium was about 600 feet, Pausanias's statement would make the distance 9000 feet, or less than two miles.

[3] To survey the site I began on the rising ground north of the Old Temple and placed the theodolite on the spot indicated on PLATE IV. by a circle and cross-lines. The direction of true north was obtained as follows: Thursday, April 4, 1895, at midnight and four minutes I sighted Polaris with the star Alioth in line above it. Waiting until 12.28, I sighted the north star alone and marked the spot (No. 1) under the plummet of the instrument, and another (No. 2) under a plummet depending from a pole 1.35 m. from No. 1, and then placed a pin at a point (No. 3) in line with No. 1 and No. 2, and 5.48 m. from the former. Friday morning, April 5, I fastened a taut string along the line 1, 2, and 3, and another string from No. 1 in the direction of the compass needle. Then sighting each string in turn through the theodolite, I read the degrees of variation as 6° 43′ west of true north.

From this station-point of the instrument I found the direction of one peak of Mount Euboea to be 30° 32′ east of true north, and its elevation above the horizon 18° 8′. Another peak was 27° 53′ north of east and elevated 12° 41′. Mount Arachnaeum was 18° 37′ south of east and elevated 2° 55′. Directly south was the island Bourzi, near Nauplia, with its water line 0° 51′ below the horizon. Directly west the mountain summit was elevated 2° 38′. From the first station-point of the theodolite I ran a line due south, and from this erected verticals east and west as base lines and obtained the angle that the ruins of each building made with the base lines. The running measurements were made with a steel metric tape, wherein I was assisted by Iohannes, a little Greek boy from Chonica.

The extent of the site occupied by the construction is about 500 m. north and south by 1000 m. east and west. The difference in levels between the highest building (the Old Temple, I) and the lowest building (Stoa X) is 29.34 m., as is shown by the table in the text (p. 108). When measuring the ruins my primary object was not to formulate any theories, but to obtain exact data, and to this end I made careful running measurements of the joints of every accessible stone in the ruins of each building and made drawings of each to the scale of one centimetre to the metre, verifying all to insure accuracy. I next measured and drew to a larger scale plans, elevations, sections, and isometric perspectives of all the loose stones and architectural fragments found on the site, 310 in all, and made full-size drawings of all capitals to obtain their exact profiles, and of the ornamental details, e. g. lions' heads and cyma-mouldings, and gave to each of the 310 fragments a number in order to facilitate reference. Finally, I made colored drawings of the terra-cotta fragments and water-color sketches of the landscapes.

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from this source. At Olympia the position of the Altis between the hill Cronium and the rivers Cladeus and Nepheus favored a more speedy burial beneath the rapid accumulation of sand and material which was deposited by the river's inundations and washed down from the hills by the rains, and consequently a better preservation of its ruins. The Argive Heraeum, on the contrary, occupied a foothill of Mount Euboea,[1] above the level of the plain, and its once sacred buildings had no doubt been robbed and demolished by desecrating hands before the action of the rains and dust-storms had concealed the foundations that now remain.

The ruins are sufficient, however, to indicate that the site was occupied throughout the ages from prehistoric to late Roman times, and to justify the attempt at a restoration shown on PLATES V. and VI. Following is a list of the ruins exhumed, with the orientation and relative level of each.

The stylobate of the Old Temple is taken as the *datum* level, and the levels of all the other buildings, being lower, are indicated by the minus sign.

	ORIENTATION.	LEVEL OF THE	METRES.
I. Old Temple	17° 18′ S. of E.	Stylobate	0.00
		Terrace	− 0.45
II. Upper Stoa	15° S. of E.	Column Bases	−10.85
III. Northeast Stoa	13° S. of E.	Column Bases	− 8.75
IV. East Building	7° S. of W.	Wall	−11.10
V. Second Temple	16° 23′ S. of E.	South Wall	−11.93
		Stylobate	−10.71?
VI. South Stoa	16° 30′ S. of E.	Column Bases	−22.93
		Bottom Step	−25.26
VII. West Building	8° 30′ E. of N.	Column Bases	−21.35
VIII. N. W. Building	26° 45′ S. of E.	Old Bases	−17.90
IX. Roman Building	25° 50′ S. of E.	Tile Floor	−26.41
X. Lower Stoa	23° W. of S.	Column Bases	−29.34

Besides the above the *Phylakeion* No. XI. is indicated on the plan. This is a small house built for use during the work of excavating and since occupied by the Greek guardian.

A, B, C, D, E, and F on the Plan are cisterns and baths.

OLD WALLS.

In addition to these generally well-defined ruins, there are numerous remains of old walls that apparently antedate the earliest of the above-named buildings, and may be classed as primitive Argive work and possibly Pre-Mycenaean.[2] Of these we would mention in particular the walls south and west of the Temple, which may be portions of the *peribolus* which inclosed the original *temenus* (cf. PLATE VII.). This theory is confirmed by the abutments that lie at an obtuse angle to the western wall and resemble the tower-foundations of the early constructions at Hissarlik and Tiryns. They apparently mark an ancient entrance to the sanctuary. Furthermore, two very old graves were found just outside the southern wall (indicated on PLATE IV. as two black spots between

[1] Pausanias, II. 17: "The sanctuary itself is on the lower slope of Euboea. For they name this mountain Euboea."

[2] Cf. Dr. Waldstein's Introduction, p. 27.



FIG. 49. — ARGIVE HERAEUM: VIEW LOOKING NORTH UPON THE CYCLOPEAN WALL AND NORTHEAST STOA (III).

Stoa VI and the old wall), and as burial within the temenus was doubtless prohibited, the evidence is strengthened that this old wall is a portion of that which originally inclosed the sanctuary.

Further remains of very old walls are shown on PLATE IV. lying just south of the Cyclopean wall; these may be the ruins of dwelling-houses for the priestesses or attendants. Other vestiges of old stone work are distinguishable in the interior of the Second Temple (V), indicating, at this most important point of the old temenus, the possible position of the ancient altar, which probably stood on or near this site long before the construction of this temple.

These walls consisting of unworked small-sized stones, laid up as rough irregular rubble without mortar, indicate a very primitive state of architectural art, similar to the walls found in the lowest layers of Hissarlik, and, like these, they may have had superstructures of sun-dried bricks.

CYCLOPEAN WALLS.

Next in chronological sequence are the massive Cyclopean walls which supported the Upper Terrace (I); these are shown on PLATE IV., and in the plan on PLATE VIII., and in elevation on PLATE IX. (cf. PLATE III. and Fig. 49). The walls resemble and are doubtless coeval with the earliest walls of Tiryns, which Dr. Waldstein supposes to have been built by Proetus about 1900 B. C.[1] One of these huge, irregular boulders measures 5.20 m. in length by 2.00 m. in height. Its width is concealed by the terrace. These

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large unhewn conglomerate boulders were laid up as rubble work without mortar, fitted together roughly with little or no cutting, their interstices being filled with smaller stones, but produce a result that shows a great advance over the earlier walls and one which arouses our admiration and wonder; for even with modern appliances it would be no small feat to construct a wall of such huge blocks with counterpoise sufficient to withstand the thrust of the terrace, the shocks of earthquakes, and the disintegrating action of centuries.

THE OLD TEMPLE PLATFORM AND THE OLD TEMPLE.

The terrace platform was originally leveled by removing the natural rock and earth from the north side and by filling in behind the Cyclopean retaining wall (cf. PLATE X.). In order to make a firm foundation and to prevent the earth from being washed away by the rains, a stone pavement was laid in width about eight metres parallel to the retaining wall. The pavement resembles the oldest paving in a courtyard at Tiryns and consists of irregular limestone blocks dressed roughly on the top, most of them triangular in shape and averaging in length about 70 centimetres. The Old Temple (I) was built partly upon this pavement, but mostly upon the natural earth and rock of the terrace. The remains of the Old Temple, though very meagre, are still sufficient to justify the restoration shown on Fig. 50, PLATES IX., XI. All that exists *in situ*, as appears on the plan on PLATE VIII., is a portion of the stylobate, of a reddish limestone, 19.20 m. long, 1.04 m. wide, and 0.45 m. high. The diagonal jointings indicate early work. The tops of the stones have flaked off and are much disintegrated, as though by the action of heat when the temple was burned.[1] This disintegration, however, may be accounted for in part by the character of the red limestone, which deteriorates naturally in the course of ages and is far inferior in quality to white limestone.[2] Before our excavations, the platform had been covered by dirt to a depth of one metre, and a layer of harder earth similar in texture and appearance to caked lime was found in various places 0.30 m. above the pavement, while beneath this layer lay a stratum of black burnt matter and charcoal.

Fortunately distinct traces are still preserved of three circles slightly depressed in the stylobate, which indicate the position of columns. These circles are 0.80 m. in diameter and spaced from centre to centre, 3.50 m. and 3.51 m. respectively, making their intercolumniation 2.70 m. and 2.71 m. or about three and one third diameters.[3]

The columns and entire superstructure were doubtless of wood, as is indicated by the small diameter and wide spacing of the columns, by the lack of any architectural stone fragments,[4] by the remains of charcoal and other burnt matter, and by the absence of any foundation under the stylobate.

[1] Pausanias, II. 17: "Above this temple are the foundations of the former temple, together with the few other remains of it that escaped the flames. It was burned down through Chryseis, the priestess of Hera, having fallen asleep, when the flames of the lamp caught the wreaths. Chryseis fled to Tegea and took sanctuary in the temple of Athena Alea. In spite of this great calamity the Argives did not take down the statue of Chryseis, and it still stands in front of the burnt temple."

[2] Dörpfeld, *Tiryns*, cap. vi. B, Technical Remarks.

[3] The columns of the Heraeum at Olympia vary in diameter from 1.00 m. to 1.26 m. and the distances between centres vary from 3.09 m. to 3.63 m., making the intercolumniations average about two diameters.

[4] I found several very archaic stone capitals and a broken column-drum below this terrace which may have belonged to the Old Temple, although I concluded they were more probably fragments of the North Stoa (II), and the West Building (VII); see PLATE IV. The capitals are shown on Fig. 51, B, C, H, and will be referred to again in connection with the North Stoa. The column-drum (V in PLATE XXIX.) shows a slit for lifting by means of a rope. Of course, it is quite possible that stone columns were gradually substituted for the wooden ones as the latter decayed, which was done at the Olympia Heraeum, especially as the late date, 423 B. C., of the destruction of the building would lead us to expect stone columns and walls even though the entablature of wood remained.

At a distance of 7.18 m. north of the stylobate is a base built of irregular stones. This base measures 1.80 m. square, as is shown on the plan.[1] In my restoration of the ground plan of the Old Temple (Fig. 50), I have assumed this base to be part of the foundation of the old statue of Hera, and to lie on the longitudinal axis of the building. North and south of this axis and at equal distances from it I found slight indications of what I assumed to be the foundations of the cella-walls. The superstructure may have been of sun-dried bricks, since no definite vestiges remain.

I continued the peristyle by spacing the columns three and one half metres on centres (B, C, D, Fig. 50), following the indications on the stylobate before mentioned, and found that one of the columns of the pronaos (A, Fig. 50) coincided exactly with a mason's centring mark on a stone 24.90 m. east of the base of the statue. The stone is shown on the plan (PLATE VIII.). The result of the calculation was a hexastyle temple with fourteen columns on the side and a cella 36.30 m. long and 8.50 m. wide, or with width to length about as 1 : 4¼. The proportions of the naos inside are, width to length, as 1 : 4. This is about the proportion which we should expect to find in a temple of great antiquity.[2]

My restoration of the entablature and roof is entirely hypothetical and illustrates only the possible appearance of the temple. I have assumed that the beam ends showed with

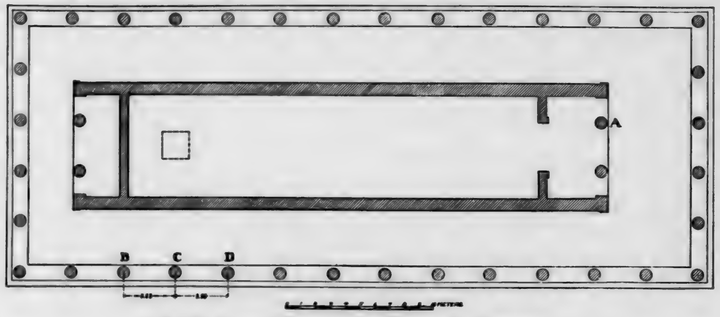


FIG. 50. — ARGIVE HERAEUM: OLD TEMPLE PLAN: RESTORED.

open spaces between them, which seems to have been the early method of Doric construction, whence were developed later the triglyphs and the metopes.[3]

The orientation of the building is 17° 18′ south of east. The heliacal orientation of its axis may assist in determining the antiquity of the building.[4]

[1] This may be the foundation of an altar. Close by it is a hole surrounded by irregular stones, which may be the remains of a sacrificial pit similar to that discovered by Dr. Dörpfeld at Tiryns.

[2] The proportions of the Heraeum at Olympia are as follows: —

Exterior width of cella to its length as 1 to 3.30.
Interior width of naos to its length as 1 to 3.80.
The Temple C at Selinus: —
Exterior width of cella to its length about as 1 to 4.
Interior width of naos to its length about as 1 to 3.
Temple S at Selinus: —
Interior width of naos to its length about as 1 to 4.

Cf. Durm, *Die Baukunst der Griechen*, p. 114, and Perrot et Chipiez, *Histoire de l'Art dans l'Antiquité*, tome VII. chap. III.

[3] Following this suggestion, Dr. Waldstein obtained a letter on the subject from Dr. Penrose. Cf. Introduction, page 29.

UPPER STOA.

Below the terrace of the Old Temple are several buildings (II, III, and IV on PLATE IV.), shown in section on PLATE XI., and in elevation on PLATE IX.; the present state of their plans is shown in detail on PLATE XII.

The walls in parts present some confusion, owing to later buildings having been superimposed on earlier constructions. For example, the west end of Stoa II seems to have been built on foundations of an earlier building. In the Northeast Stoa (III) are later partition walls, and between this and the East Building are several older foundation walls which run at various angles that bear no definite relation to the buildings named.

I have attempted a somewhat free restoration of these buildings (see PLATE IX.), since the fragments found were too few to insure accuracy throughout.

In Stoa II (PLATE XII.) the stone bases for the columns are *in situ;* they are light limestone and nearly every one has a small pry-hole, which indicates the position of a column. They are cut true on top and on the sides to a certain depth, below which the stone is left rough, having been concealed by the flooring of mosaic or tile. The stylobate stones are similarly cut on the inside and bear vestiges of pry-holes. On the outside exposed surfaces the stylobate stones and steps are well cut and neatly jointed. Where some of the stylobate stones have been removed, a foundation is revealed of irregular stones, as shown on the plan.

Two column-drums, of 0.60 m. diam. and with sixteen flutings, remain on bases in the Stoa, and I conclude that the very old capitals of Fig. 51 were from this building, together with two old cornice (*geison*) blocks, one of which bears traces of colored plaster. Owing to the smallness of the columns and their wide intercolumniation, it is very probable that the entablature of the Stoa was of wood, and the stone cornice blocks may have belonged to an inclosed portion of the building at the west end. The height of the portico columns could not have exceeded three metres (cf. Fig. 52, E). The rear wall was built of *poros* stone, and a drain behind the wall indicates that the roof pitched to the rear as well as to the front, with a ridge in the centre. This drain carried the rain-water into a small reservoir running back into the ground, as shown on the plan (PLATE XII.), and in the elevation of the present state (PLATE IX.). Adjacent to this reservoir are remains of three cisterns or baths, B, C, D, with plastered floors.

Between this Stoa II and the Northeast Stoa is a level platform cut out of the conglomerate rock with a rear wall of fairly good workmanship (cf. Fig. 49). Several bases, probably for statues, still remain on this platform, one being partially concealed by a later wall. One of these bases at the west end of the platform is shown in detail on PLATE XXIX., B and H. It consists of light limestone in three sections rebated one over the other, with joints cut to a nicety and filled with lead. Besides these bases there are many cuts in the stylobate and elsewhere for stelae. This platform may at one time have been roofed. The two walls which project forward from the rear are later than the rear wall and are not bonded into it in any way. In my restoration I have assumed that the platform was open and that steps ascended from it to the upper terrace, feeling justified in this conclusion by the presence of the statue-bases and the absence of any evidence of columns.

An interesting stone is one of a confused group shown on the plan about the centre of the front steps of the platform. On it are carved two birds, probably doves (Fig. 53). Another stone of great antiquity (Fig. 54) was found in the adjoining Building III, with

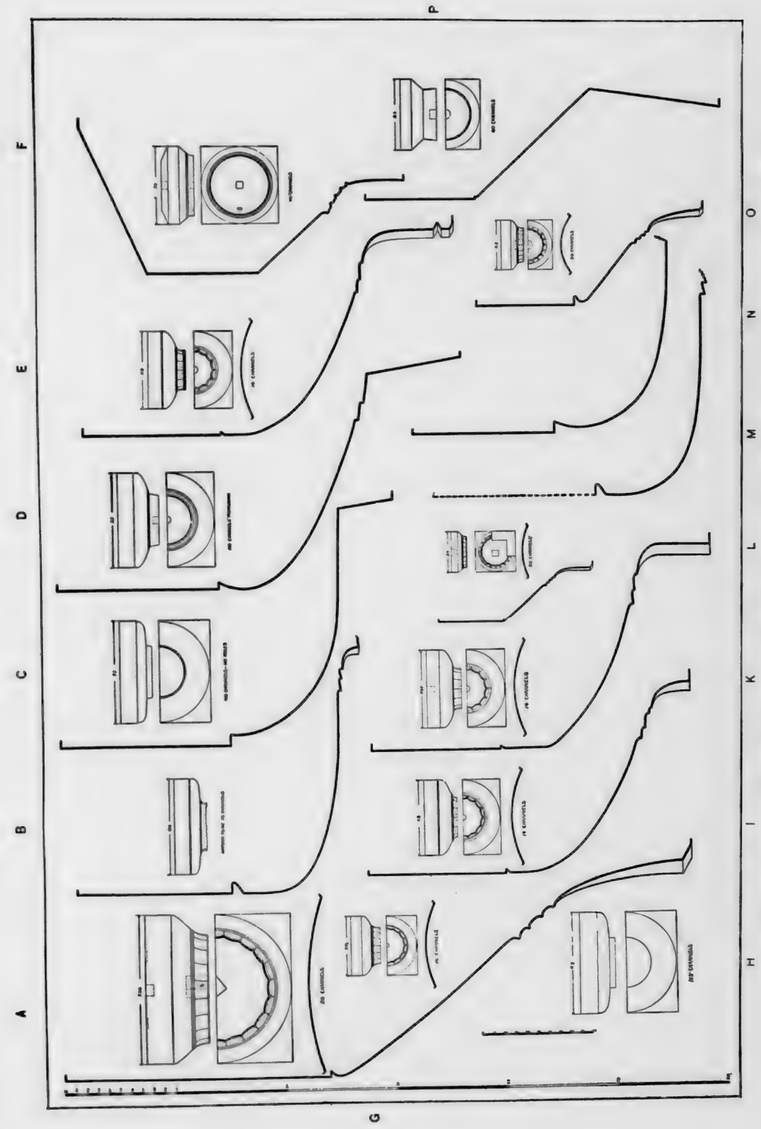


FIG. 51. — ARGIVE HERAEUM: CAPITALS, AND DETAILS OF THEIR PROFILES DRAWN TO A LARGE SCALE. BY EDWARD L. TILTON.
A, Second Temple; osterior columns. L and F, Second Temple; interior columns, upper and lower orders (?). B, C, D, G, H, M, N, Stoa II and West Building VI. E, I, K, West Building, upper order. P, Northwest Building (?). O, Stoa III (?).

carving of fish and waves. The hole through it was probably for the purpose of securing cattle before the sacrifice, and would lead one to consider it part of an old altar.

STOA III.

The Northeast Building or Stoa (III) is inside its walls 20.60 m. in length and 6.00 m. in width. The conglomerate rock was partially leveled to receive its finished flooring, which appears to have consisted at one time of *poros* stone blocks, as shown in the northwest corner, where ten of them still remain *in situ*. It is evident, however, that these

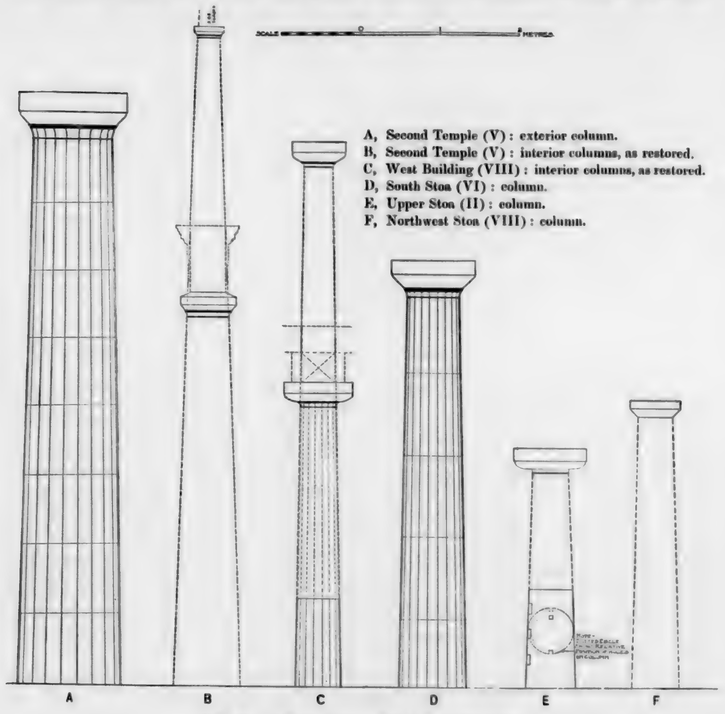


Fig. 52. — Columns from the Argive Heraeum.

stones were not part of the original flooring, since they are above the level of the column bases. The original walls at the rear and side remain to the height of about one metre (cf. Fig. 49). They are built of light limestone carefully tooled, finely jointed, and laid up without clamps or mortar. The east wall is 0.60 m. thick and does not bond with the rear wall, indicating that the original intention may have been to extend the Stoa farther

toward the east. The exterior of this east wall is irregular, having been concealed by the bank of earth or by steps ascending to the higher level of the upper terrace. The level of this building is about two metres above that of Stoa II, and remains of steps exist along the entire length. On Plate IX. I have indicated a suggestion for the restoration of these steps.



Fig. 53. — Argive Heraeum : Stone with doves carved in relief.

The foundations of the steps are of *poros* stone, the steps having doubtless been light limestone and a continuation of those which exist in front of the Stoa II and the open platform between II and III.

In the Northeast Building (III) there are six limestone column bases *in situ*, averaging 0.60 m. square, and along the front a stylobate of limestone rubble level with the bases. Upon this stylobate are some blocks of breccia which seem to be of later date, as are also the partition rubble walls in the Stoa which cover two of the column bases. A small drum of a column, 0.50 m. in diameter, and having sixteen flat faces, stands upon one of the bases.

The two antæ-caps, C and K on Plate XXIX., were found on the wall of this Stoa. K may belong to the East Building (IV). C had traces of stucco upon which a fret ornament was scratched and which was, originally, no doubt, painted. A cornice-block showed a height of 0.15 m., and a small triglyph fragment showed the width to be 0.312 m., whence the following proportions would follow: Height of triglyph, about 0.47 m.; of epistyle, about 0.47 m.; of cornice, 0.15 m., making the total entablature 1.09 m. in height. The corresponding columns would then measure in height about 3.27 m., in diameter about 0.60 m.; and if spaced to allow two triglyphs between, there would be seven columns 2.49 m. on centres, as shown on Plate IX. If spaced with one triglyph between, there would be thirteen columns 1.51 m. on centres, although this



Fig. 54. — Argive Heraeum : Stone carved with fish and waves, by incised lines.

carving of fish and waves. The hole through it was probably for the purpose of securing cattle before the sacrifice, and would lead one to consider it part of an old altar.

STOA III.

The Northeast Building or Stoa (III) is inside its walls 20.60 m. in length and 6.00 m. in width. The conglomerate rock was partially leveled to receive its finished flooring, which appears to have consisted at one time of *poros* stone blocks, as shown in the northwest corner, where ten of them still remain *in situ*. It is evident, however, that these

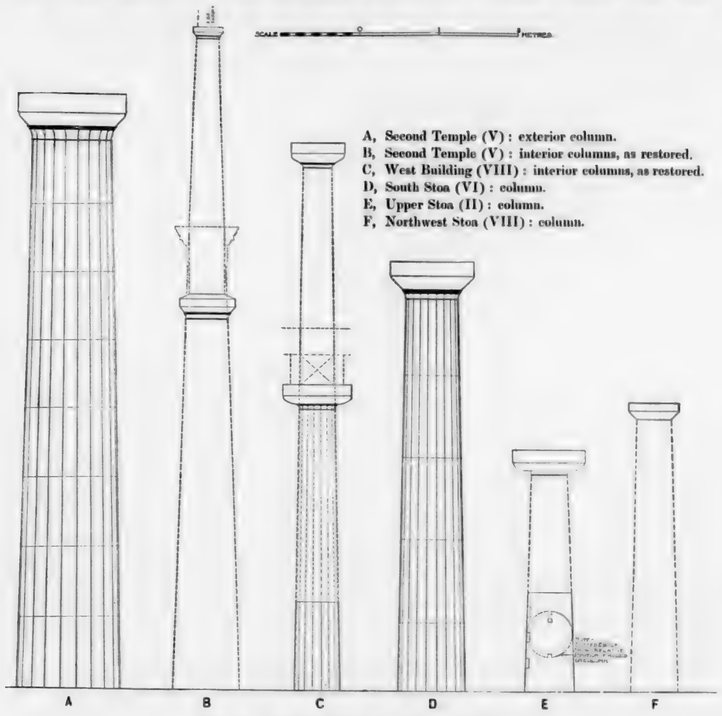


Fig. 52. — Columns from the Argive Heraeum.

stones were not part of the original flooring, since they are above the level of the column bases. The original walls at the rear and side remain to the height of about one metre (cf. Fig. 49). They are built of light limestone carefully tooled, finely jointed, and laid up without clamps or mortar. The east wall is 0.60 m. thick and does not bond with the rear wall, indicating that the original intention may have been to extend the Stoa farther

toward the east. The exterior of this east wall is irregular, having been concealed by the bank of earth or by steps ascending to the higher level of the upper terrace. The level of this building is about two metres above that of Stoa II, and remains of steps exist along the entire length. On Plate IX. I have indicated a suggestion for the restoration of these steps.



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Fig. 54. — Argive Heraeum : Stone carved with fish and waves, by incised lines.

arrangement would not allow the front columns to coincide with those of the interior. It is furthermore possible that the building had at one time only a wall in the front with doors and windows, or again a high socle with a colonnade of small columns.

The general character of the masonry indicates that the original building was a refined structure and later in date than Stoa II. The still later interior partition walls and the front breccia wall seem to show that the building was at one time divided into rooms and possibly used as a dwelling by the attendants of the sanctuary or as a treasure-house.

EAST BUILDING IV.

Next in order of position, although not in order of chronology[1] is the East Building (IV), which is 28.90 m. (about 96 feet) long over all, by 17.10 m. (about 57 feet) wide (Plate XII., cf. Fig. 55). The line of its northern wall produced will strike the northeast angle of the existing ramp to the Second Temple (V), leading one to conclude that its orientation may have had some connection with the functions or mysteries of the Temple. The plan of the building resembles somewhat the earlier "Hall of Initiation" at Eleusis,[2] and is nearly the same in length, although less in width. The early *Telesterion* of Eleusis measured about 82 feet square inside, and its roof was supported by five rows of five columns each. The main hall of our building measures inside the walls about 73 feet in length by about 50 feet in width, and its roof was supported by three rows of five columns each. Both buildings had portico entrances; that of ours facing westward, while that at Eleusis faced eastward. A row of columns on the central axis is found in each building and seems peculiar, although it is a feature common in Greek buildings and is structurally a good arrangement, as it gives direct support to the ridge of the roof. The orientation of the main axis of our building is seven degrees south of west. I should place the date of its construction in the latter half of the fourth century B. C. The find of Egyptian scarabs in it suggests that its religious functions may have been allied to the mysterious rites of Egypt.

A fine retaining wall of cut conglomerate stone supports the terrace on the south and east sides (Plate XIII.). The conglomerate is of rounded pebbles. The wall is built in regular coursed ashlar work with stones about 0.35 m. high, between two other courses about 0.74 m. high, and with an offset at each of the narrow courses. The joints are much mutilated, from which I judge that the stones were originally fastened together by metal clamps which have been stolen. The foundations of the north and west walls and of the central piers or bases are built of *poros* stone. On the north wall are some conglomerate stones, and a few finely tooled limestone blocks with clamp-holes.

I have attempted a free restoration of the building (Plates VI., XI.), since no definite remains of the superstructure were found. Since the completion of the drawings, however, I have concluded that a corner triglyph of black stone belonged to this building. The form of the clamp-holes and the cut of the grooves indicate fourth century B. C. work, or a date later than the best period. The triglyph measures 0.36 m. wide and 0.67 m. high, which indicates an epistyle about 0.67 m. and cornice 0.26 m., making total entablature 1.60 m. in height. The columns would be about 4.80 m. high, 0.80 m. in diameter, and spaced 2.07 m. on centres. This would give seven columns *in antis* to the front instead of the three shown in the drawings, and would coincide exactly with the total width of the building (cf. Fig. 56).

[1] A possible chronological sequence of the various constructions might be as follows:—
Old walls.
Cyclopean walls.
Old Temple (I).
Upper Stoa (II) and possibly early construction on the site of the Northeast Stoa (III).
Early structure on site of Northwest Building (VIII).
Part of Lower Stoa (X).
West Building (VII), sixth century B. C.
Early Greek building on site of Roman Building (IX).
Rest of Lower Stoa (X).
Stoa on site of Northwest Building (VII).
Second Temple (V), 420 B. C.
Lower Stoa (VI) and steps, 410 B. C.
Reconstruction of Stoa (III).
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Later construction on Northwest Building (VIII).
Partition walls in Stoa (III).
Roman Building (IX), first century B. C.

[2] Cf. Frazer's *Pausanias*, vol. iii., plan on p. 504.



Fig. 55.—Argive Heraeum: View looking northeast upon the East Building (IV) and the retaining wall on its northwest side.

SECOND TEMPLE.

We may now turn to consider the Second, or Fifth Century, Temple (V), where we find ourselves on firmer ground both historically and architecturally; for the principal part of Pausanias's description[1] of the sanctuary is devoted to this temple, while the architec-

[1] Pausanias, II. 17. 3–6: "They say that the architect of the temple was Eupolemus, an Argive. The sculpture over the columns represent, some the birth of Zeus and the battle of the gods and giants, others the Trojan war and the taking of Ilium. Before the entrance stand statues of women who have been priestesses of Hera, and statues of heroes, including Orestes; for they say that the statue which the inscription declares to be the Emperor Augustus is really Orestes. In the fore-temple are ancient images of the Graces on the left; and on the right is a couch of Hera and a votive offering consisting of the shield which Menelaus once took from Euphorbus at Ilium. The image of Hera is seated on a throne and is of colossal size; it is made of gold and ivory and is a work of Polycleitus. On her head is a crown with the Graces and the Seasons wrought on it in relief: in one hand she carries a pomegranate, in the other a sceptre. The story about the pomegranate I shall omit, as it is of a somewhat mystic nature; but the cuckoo perched on the sceptre is explained by a story, that when Zeus was in love with the maiden Hera, he changed himself into this bird, and that Hera caught the bird to play with it. This and similar stories of the gods I record, though I do not accept them. It is said that beside the image of Hera once stood an image of Hebe, also of gold and ivory, a work of Naucydes. And beside it is an antique image of Hera on a column. But her most ancient image is made of the wood of the wild pear-tree: it was dedicated in

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[2] Cf. Frazer's *Pausanias*, vol. iii., plan on p. 504.



FIG. 55. — ARGIVE HERAEUM: VIEW LOOKING NORTHEAST UPON THE EAST BUILDING (IV) AND THE RETAINING WALL ON ITS NORTHWEST SIDE.

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We may now turn to consider the Second, or Fifth Century, Temple (V), where we find ourselves on firmer ground both historically and architecturally; for the principal part of Pausanias's description[1] of the sanctuary is devoted to this temple, while the architec-

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tural remains, although few, are fortunately sufficient to justify a complete restoration of it (cf. PLATE XIV.).

The great revolution in the whole history of the Heraeum is marked by the burning of the Old Temple in 423 B. C. and the erection of this new temple on the second platform. And it is well to recall that, about forty years earlier in the century, the Mycenaeans were finally overcome by the inhabitants of the city of Argos, who thenceforth maintained their absolute predominance on the plain. We expect, therefore, the new buildings to bear the impress of Argive artists; and as the Argive School of Art was in the fifth century rivaled only by that of Athens, we need not be surprised to find the architectural details equaling in beauty and refinement those of the Parthenon.

The first task of the Argive architect Eupolemus and his colleagues was to level the second platform upon which an ancient altar probably stood. The platform consists

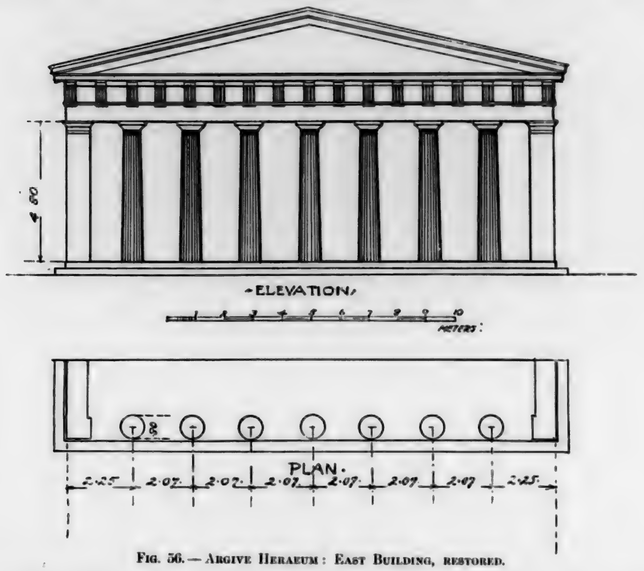


FIG. 56. — ARGIVE HERAEUM: EAST BUILDING, RESTORED.

of a conglomerate rock sloping towards the south. Eupolemus cut away the rock from the north side and filled in the south and west sides, building a retaining wall of *poros* stone outside the wall of the ancient peribolus, which was completely covered and so remained until exhumed in our excavations.

Tiryns by Pirasus, son of Argos, and when the Argives destroyed Tiryns they brought the image to the Heraeum. It is a small seated image: I saw it myself. Amongst the remarkable dedicatory offerings is an altar, on which is wrought in relief the fabled marriage of Hebe and Hercules. The altar is of silver. Further there is a peacock of gold and shining stones dedicated by the Emperor Hadrian, because this bird is considered sacred to Hera. There is also a golden crown and a purple robe, offerings of Nero" (Frazer). See Introduction, pp. 21 ff.

The retaining wall was built nearly parallel to the new temple on the south and west about 20 m. distant. Along the western side of the terrace, the direction of the wall was regulated by the position of the West Building (VII), which had been constructed in the previous century (cf. PLATE XV.).

Against the southern retaining wall a beautiful Stoa (VI) was built, and a handsome flight of steps leading up from the lower level to the platform of the new temple, both of which I shall describe in order (cf. Fig. 57.).

Turning again to the temple, we find its orientation to be 16° 23′ south of east. The plan of the present state of the *crepidoma* or foundation walls is shown on PLATES IV.



FIG. 57. — ARGIVE HERAEUM: VIEW FROM THE SOUTHEAST LOOKING UPON THE FLIGHT OF STEPS; THE SOUTH STOA AND THE SECOND TEMPLE ABOVE.

and XVI., the section of the walls on PLATE XI., and the elevation of the south wall on PLATE XIII. These foundation walls measure 39.54 m. along the north edge; 39.65 along the south edge; 20.08 m. and 20.10 m. along the east and west, respectively. The natural conglomerate rock had been carefully cut away and leveled to serve as footing for the northern walls of the crepidoma and the cella. The southern wall of the cella starts from a footing course of large flat irregular stones, while the southern crepidoma walls are carried down to a depth as shown in section (PLATE XI.).

These walls are built of *poros* stone in regular courses of alternate headers and stretchers carefully breaking joints vertically (excepting in one case on an interior pier where the joints coincide in two courses). The average dimensions of these squared stones are 1.20 m. in length, 0.60 m. in width. and 0.37 m. in height. The total width of walls is 3.73 m. The stones are laid up without mortar or clamps, but so nicely fitted that at some of the joints they seem to have grown together.

I shall now describe the course of reasoning which I followed in my restoration of the temple (PLATE XVII.). Fig. 58 shows a beautifully veined limestone block resem-

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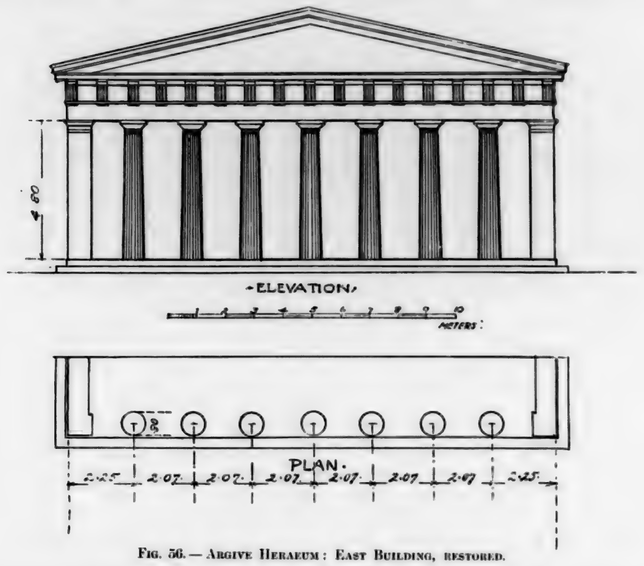


FIG. 56. — ARGIVE HERAEUM: EAST BUILDING, RESTORED.

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I shall now describe the course of reasoning which I followed in my restoration of the temple (PLATE XVII.). Fig. 58 shows a beautifully veined limestone block resem-

bling marble. It measures 1.633 m. in length, 0.32 m. in height. The other dimensions could not be measured, as the stone was broken. The face of this stone is cut with a drafted edge at one end, and with two fillets and a slight cove moulding along the bottom. Its top shows sufficient traces of the *scamilli* to determine exactly the size of the base of the columns. The channelings cut on the stone were sufficiently intact and clear to enable me to find the centre of the circle by erecting perpendiculars to the chords of two flutings. At the intersection of these perpendiculars I found a small centring hole and a mason's scratch-mark at right angles to the face of the stone. One leg of the mason's compass had been set in the hole, and with the other a radius of 0.66 m. had been marked off on the stone. The radius to the chord of the channelings is 0.65 m.

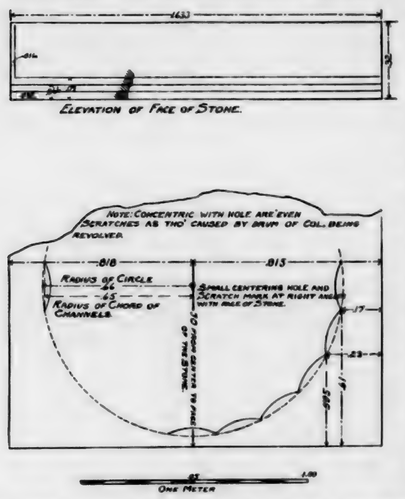


Fig. 58. — Argive Heraeum: Actual state of a stylobate stone of the Second Temple.

These dimensions are of especial interest, as they give a clue to the unit of measurement which I found prevailed throughout the building.[1] The Greek unit equals 0.326 m., making the length of the stone, as before given, 1.633 m., equal to five units, and the diameter of the columns between chords (twice the radius 0.65 m. = 1.30 m.) equal to four units. I found the triglyphs measured two units and the metopes three units. By referring to the elevations (Fig. 59 and Plate XVIII.), it will be seen at a glance that if the triglyphs are spaced five units on centres, the columns will be spaced ten units on centres, except the corner ones, which, owing to the position of the triglyphs, are spaced one unit less from the next adjacent column or nine units from centre to centre.

Proceeding on this line still further, I found the following proportions developed as shown graphically on Plate XIX. The front of the temple measures from centre to centre of columns, in units, 9 + 10 + 10 + 10 + 9 = 48 units. The height of temple to the under side of the cornice equals 36 units. Considering 48 units the base of a right-angled triangle and 36 units its height, the hypothenuse will be 60 units, which if thrown over and added to the base of 48 units, yields 108 units, or the length of the temple, viz.: 9 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 9 = 108. The above triangle may have each side divided by 12, reducing it to 4 for base, 3 for height, and 5 for hypothenuse, which is the simplest right-angled triangle known.[1]

[1] In this connection, I wish to express my obligation to Dr. Dörpfeld, who first discovered, when looking over my note-books and diagrams, that the measurements shown by the stone in question coincided with the unit of measurement at Olympia, or about 0.326 m., being $\frac{1}{3}$ of an inch longer than the English foot, which equals 0.304 m.

Many of the minor measurements seem to indicate that the unit may have been subdivided into twelfths, like the English foot, as follows: —

$\frac{1}{12}$ = .027 —	$\frac{4}{12}$ = 1.08 —	$\frac{7}{12}$ = 1.90 —	$\frac{10}{12}$ = 2.71
$\frac{2}{12}$ = .054 —	$\frac{5}{12}$ = 1.35 —	$\frac{8}{12}$ = 2.17 —	$\frac{11}{12}$ = 2.98
$\frac{3}{12}$ = .081 —	$\frac{6}{12}$ = 1.63 —	$\frac{9}{12}$ = 2.44 —	$\frac{12}{12}$ = 3.26

To return to the detailed reconstruction of the temple: I found several *poros* stone capitals with well-preserved profiles. The firm line of the echinus (Fig. 51, A, and Fig. 52, A) and the general proportions of the capital closely resemble those of the Parthenon. The width of the abacus is 1.36 m. or, like the Parthenon, a little more than the diameter at the base of the column; the height of abacus is 0.24 m., equal to $\frac{9}{12}$ of a unit; the height of the echinus including annulets is 0.203 m., and height of the neck is



Fig. 59. — Argive Heraeum: Front Elevation of Second Temple. Restored by Edward L. Tilton.

[1] This proportion of the length equaling the width plus the hypothenuse of a triangle which has as its third side the height to the cornice prevails here because the temple has but twelve columns on the side. A similar proportion may be found in those hexastyle temples: that of Zeus at Olympia, the "Theseum" at Athens, and the temple of Poseidon at Paestum, if limited to the twelfth column on the side and if this twelfth column is spaced as a corner column.

I found another series of equations as follows: The width of temple to outside of columns (see Plate XIX.) is 52 units, its corresponding length is 112 units, and its height to top of corona is 37 units, whence developed —

37 is to 52 as $2\frac{1}{2}$ is to $3\frac{1}{4}$, or $37 \times 3\frac{1}{2} = 52 \times 2\frac{1}{2} = 130$, and 37 is to 112 as $1\frac{1}{2}$ is to $4\frac{1}{2}$, $37 \times 4\frac{1}{2} = 112 \times 1\frac{1}{2} = 167$. Or the height to the width of the temple is as in the major scale in music, viz.: two full tones and a half tone to three full tones and a half tone, and height is to length of temple as in the minor scale in music, viz.: one full tone and a half tone to four full tones and a half tone. I cite this analogy because so much has been written about the relation between Greek architecture and music, although I do not suppose that any such musical proportion was considered by Eupolemus. It does convey the idea, however, that what is pleasing to the eye may bear a certain harmonious relation to that which is pleasing to the ear in music, and to the mind in geometry and mathematics.

bling marble. It measures 1.633 m. in length, 0.32 m. in height. The other dimensions could not be measured, as the stone was broken. The face of this stone is cut with a drafted edge at one end, and with two fillets and a slight cove moulding along the bottom. Its top shows sufficient traces of the *scamilli* to determine exactly the size of the base of the columns. The channelings cut on the stone were sufficiently intact and clear to enable me to find the centre of the circle by erecting perpendiculars to the chords of two flutings. At the intersection of these perpendiculars I found a small centring hole and a mason's scratch-mark at right angles to the face of the stone. One leg of the mason's compass had been set in the hole, and with the other a radius of 0.66 m. had been marked off on the stone. The radius to the chord of the channelings is 0.65 m.

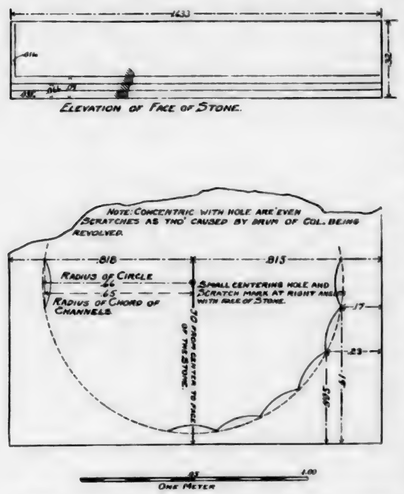


FIG. 58. — ARGIVE HERAEUM: ACTUAL STATE OF A STYLOBATE STONE OF THE SECOND TEMPLE.

These dimensions are of especial interest, as they give a clue to the unit of measurement which I found prevailed throughout the building.[1] The Greek unit equals 0.326 m., making the length of the stone, as before given, 1.633 m., equal to five units, and the diameter of the columns between chords (twice the radius 0.65 m. = 1.30 m.) equal to four units. I found the triglyphs measured two units and the metopes three units. By referring to the elevations (Fig. 59 and PLATE XVIII.), it will be seen at a glance that if the triglyphs are spaced five units on centres, the columns will be spaced ten units on centres, except the corner ones, which, owing to the position of the triglyphs, are spaced one unit less from the next adjacent column or nine units from centre to centre.

Proceeding on this line still further, I found the following proportions developed as shown graphically on PLATE XIX. The front of the temple measures from centre to centre of columns, in units, 9 + 10 + 10 + 10 + 9 = 48 units. The height of temple to the under side of the cornice equals 36 units. Considering 48 units the base of a right-angled triangle and 36 units its height, the hypothenuse will be 60 units, which if thrown over and added to the base of 48 units, yields 108 units, or the length of the temple, viz.: 9 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 9 = 108. The above triangle may have

[1] In this connection, I wish to express my obligation to Dr. Dörpfeld, who first discovered, when looking over my note-books and diagrams, that the measurements shown by the stone in question coincided with the unit of measurement at Olympia, or about 0.326 m., being $\frac{1}{8}$ of an inch longer than the English foot, which equals 0.304 m.

Many of the minor measurements seem to indicate that the unit may have been subdivided into twelfths, like the English foot, as follows: —

$\frac{1}{12}$ = .027 —	$\frac{4}{12}$ = 1.08 —	$\frac{7}{12}$ = 1.90 —	$\frac{10}{12}$ = 2.71
$\frac{2}{12}$ = .054 —	$\frac{5}{12}$ = 1.35 —	$\frac{8}{12}$ = 2.17 —	$\frac{11}{12}$ = 2.98
$\frac{3}{12}$ = .081 —	$\frac{6}{12}$ = 1.63 —	$\frac{9}{12}$ = 2.44 —	$\frac{12}{12}$ = 3.26

each side divided by 12, reducing it to 4 for base, 3 for height, and 5 for hypothenuse, which is the simplest right-angled triangle known.[1]

To return to the detailed reconstruction of the temple: I found several *poros* stone capitals with well-preserved profiles. The firm line of the echinus (Fig. 51, A, and Fig. 52, A) and the general proportions of the capital closely resemble those of the Parthenon. The width of the abacus is 1.36 m. or, like the Parthenon, a little more than the



FIG. 59. — ARGIVE HERAEUM: FRONT ELEVATION OF SECOND TEMPLE. RESTORED BY EDWARD L. TILTON.

diameter at the base of the column; the height of abacus is 0.24 m., equal to $\frac{9}{12}$ of a unit; the height of the echinus including annulets is 0.203 m., and height of the neck is

[1] This proportion of the length equaling the width plus the hypothenuse of a triangle which has as its third side the height to the cornice prevails here because the temple has but twelve columns on the side. A similar proportion may be found in these hexastyle temples: that of Zeus at Olympia, the "Theseum" at Athens, and the temple of Poseidon at Paestum, if limited to the twelfth column on the side and if this twelfth column is spaced as a corner column.

I found another series of equations as follows: The width of temple to outside of columns (see PLATE XIX.) is 52 units, its corresponding length is 112 units, and its height to top of corona is 37 units, whence developed —

37 is to 52 as $2\frac{1}{2}$ is to $3\frac{1}{2}$, or $37 \times 3\frac{1}{2} = 52 \times 2\frac{1}{2} = 130$, and 37 is to 112 as $1\frac{1}{2}$ is to $4\frac{1}{2}$, $37 \times 4\frac{1}{2} = 112 \times 1\frac{1}{2} = 167$. Or the height to the width of the temple is as in the major scale in music, viz.: two full tones and a half tone to three full tones and a half tone, and height is to length of temple as in the minor scale in music, viz.: one full tone and a half tone to four full tones and a half tone. I cite this analogy because so much has been written about the relation between Greek architecture and music, although I do not suppose that any such musical proportion was considered by Eupolemus. It does convey the idea, however, that what is pleasing to the eye may bear a certain harmonious relation to that which is pleasing to the ear in music, and to the mind in geometry and mathematics.

0.127 m., which together is 0.33 m., equaling one unit or one fourth of the diameter of the column at base. Dowel-holes exist both in the top and bottom of capitals, one measuring 0.15×0.17 m. and 0.20 in depth (cf. Fig. 51, A). The diameter of the hypotrachelium between bottom of channels is .967 m. or three units, exactly the proportion of the Parthenon. I found several drums of *poros* stone which fitted properly one over the other (cf. Fig. 60), the lower one agreeing exactly with the *scamilli* on the above-described stylobate stone (Fig. 58). Some of the drums measured slightly longer on one side than on the opposite, and doubtless inclined inward toward the building, a refinement practiced in the best period.[1] The columns had twenty channelings. The length of the chord of a channel at the hypotrachelium measured .16 m. or one half of a unit; the depth of the channel was .013 m. Slight vestiges of plaster remained which originally no doubt covered the columns to offer a smooth surface for painting. I determined the heights of column drums as follows, beginning with the bottom (cf. Fig. 60) (the interrogation mark indicates that the exact height was not found): .87 + .86 + .86 + .86 + .84? + .84? + .84 + .84? + .57 m., making a total, including capital, of 7.38 m. or $22\frac{5}{12}$ units or 5.67 diameters. The Parthenon columns measure 10.42 m. or 5.29 diameters. The columns of the "Theseum" measure 5.72 m. in height or 5.55 diameters.

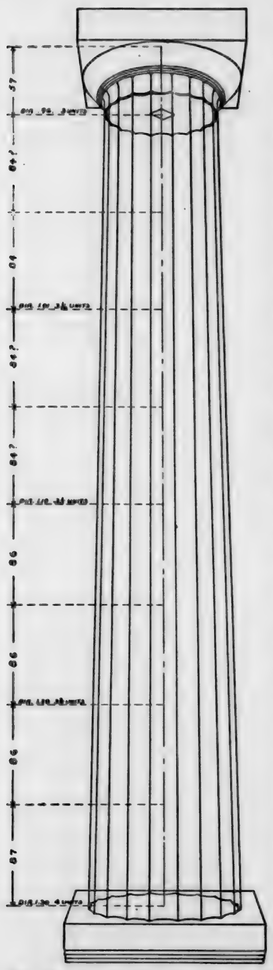


FIG. 60. — ARGIVE HERAEUM: COLUMN AND STYLOBATE STONE OF SECOND TEMPLE.

I arrived at the dimensions of the entablature as follows: —

A fragment of *poros* triglyph gave the distance between centres of glyphs as scant 0.22 m.; three times which showed the total width of triglyph to be 0.65 m. or two units. The total height of triglyph of this period is about $3\frac{1}{6} \times \frac{1}{2}$ their width, which in this case would be $3\frac{1}{6} \times .325 = 1.029$ m.

In temples of this period the height of the epistyle equals the height of the triglyphs; a fragment of the epistyle confirmed this measurement by showing the taenia to be 0.09 m. high, and the regula 0.06 m.

[1] Since none of the stylobate stones remained *in situ*, I was unable to ascertain whether there were any of the refined curves which Pennethorne discovered as having prevailed throughout the Parthenon; but judging from the general beauty of detail in the existing fragments, it would seem that every aesthetic refinement known at the time must have been practiced in the design and construction of this Argive temple.

high, which are in due proportion for an epistyle 1.02 m. high.[1] Remains of stucco adhere to this epistyle fragment.

The guttae under the regula were 0.058 m. in diameter. A cornice block (*geison*), also of *poros* stone, gave the width of the mutules as 0.64 m., the diameter of their guttae as 0.055 m., and their distance on centres, 0.115 m. The mutules were spaced 0.172 m. apart, making the distance from centre to centre of the mutules over the triglyphs 1.624 m. or (practically 1.63 m.) =5 units. The height of the face of the cornice from the top of mutules to the top of the beak-moulding was 0.315 m.; add the height of mutule, 0.047 m., and we have 0.362 m.

We now have the total height of the entablature as follows: —

Epistyle	1.029
Frieze	1.02
Cornice, omitting cyma or crown moulding	.362
	2.411 m.

This is a little less than one third the height of the columns, which, as above shown, was 7.38 m. The exact proportion is as 1 to 3.05. The proportions in the Parthenon are as 1 to 3.07.[2]

The slope of the pediment I could not verify exactly, so I assumed the height of the tympanum equal to one ninth of the total length of the horizontal cornice,[3] which is equal to the width of eleven triglyphs at 0.652 m., or 7.17 plus ten metopes at 0.978 m. or 9.78 m. plus the overhang of the cornice at each end, which, omitting the beak-moulding, is 0.49 m., and for both ends is 0.49 m. × 2 or 0.98 m. The total horizontal length therefore is 17.93 m., which equals 55 units.

The height of the tympanum is $\frac{1}{9} \times 17.93$ or 1.99 +.

The height from the stylobate to the apex of the tympanum is therefore shown to be as follows: —

Columns	7.38 m.
Entablature	2.41 m.
Tympanum	1.99 m.
	11.78 m.

This is almost exactly 36 units (cf. PLATE XIX.).

The cyma-moulding and lion's head water-spouts are shown in detail on Figs. 61, 62. They are of white marble. In this connection I may remark that white marble is the material which was used for all the sculpture and carved portions of the temple, i. e. the metopes, the pediment figures, and the cyma-mouldings, and for the roof tiles as well. The crown-mould of the cornice or cyma is beautifully carved in high relief with the conventional anthemion ornament interspersed with Hera's typical bird, the cuckoo-dove (*Macropygia ?*), symbolical of gentleness, peace, and love.[4] The anthemion ornament was frequently used to decorate the cyma during the best period of Greek art, but

[1] I made the measurements with great care, but owing to the worn condition of many of the stones and the slight differences caused by the stucco, absolute accuracy could not be assured. In the drawings of the restored elevations the epistyle is a little too low and the frieze as much too high, making the total height correct.

[2] P. Fauré, *Théorie des Proportions en Architecture*, Paris, 1893, plate 16.

[3] This pitch is a little steeper than that of the Parthenon, but nearly the same as that of the "Theseum" and less than that of the temple at Sunium.

[4] Compare the old stone, Fig. 53, and the Argive coin which shows Hera's crown ornamented like the cyma with anthemion (Fig. 12), and again her sceptre as described by Pausanias (cf. Note on p. 117, and Fig. 64).

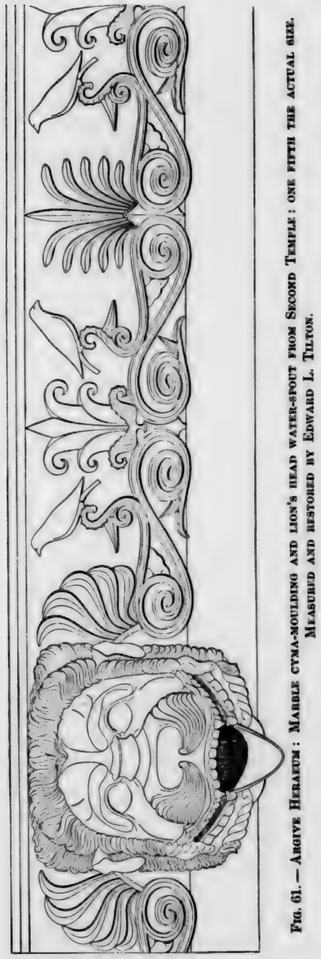


FIG. 61. — ARGIVE HERAEUM: MARBLE CYMA-MOULDING AND LION'S HEAD WATER-SPOUT FROM SECOND TEMPLE: ONE FIFTH THE ACTUAL SIZE. MEASURED AND RESTORED BY EDWARD L. TILTON.

in other examples which are left to us it is only painted; this carved cyma is therefore quite unique. I found a great many fragments of the cyma, some well preserved and others much weathered, probably due to their relative exposures on the north and south sides of the temple. A difference in execution was also discernible, showing that different carvers had been employed. The profile of the moulding is shown in Fig. 62; its height over all is approximately 0.27 m. or $\frac{1}{12}$ of a unit, or about equal to the combined heights of the cornice fascia and beak-moulding. The broad fillet of the cyma is 0.075 m. high, the small moulding at top 0.028 m. and the overhang is 0.03 m. beyond the line of its fillet.

Many fragments of lion's head water-spouts were found attached to portions of the cyma and well carved from the same white marble. They are superior in design and execution to most of such gargoyles as are left to us from the temples of the period. Several of these heads, which were almost perfect, were of two sizes. In my restoration I have placed the larger head over each column and two smaller ones between, as this arrangement seemed to space properly when laid out full size with the anthemion.

The roof of the temple was covered with white marble tiles, which, we are told by Pausanias, had been used at Olympia about forty years earlier.[1] PLATE I. (Frontispiece of this chapter) shows the details. The width of the flat tiles was about 0.54 m. or $1\frac{8}{12}$ units.

The ridge-tiles covering the joints were 0.19 m. or $\frac{7}{12}$ units wide. Every alternate ridge-tile was carried down and attached to the back of the cyma, while those in a line with the lions' heads were closed at the ends and stopped about a half length back of the cyma to allow the water to run out of the lions' spouts.

[1] In describing the Temple of Zeus at Olympia, Pausanias writes (V. 10): "The architect was Libon, a native. The tiles are not of baked earth, but of Pentelic marble, which is wrought into the shape of tiles. They say that this was a contrivance of Byzes, a Naxian, who is said to have made the images in Naxos which bear the following inscription: —

"'Eurygus, a Naxian, dedicated me to the offspring of Latona, Eurygus, son of Byzes, who first made tiles of stone.'

"This Byzes lived in the time of Alyattes, the Lydian, and of Astyages, the son of Cyaxares, king of the Medes."

The groups of sculpture shown in the pediment and the metopes in the restoration are composed entirely from imagination to give the possible appearance of the original temple. We know in general, however, from Pausanias [1] that the subjects of the sculptures were "The Birth of Zeus," "The Battle of the Gods and Giants," and "The Siege of Troy and Taking of Ilium." One of the pediment groups probably illustrated "The Birth of Zeus." Fig. 63 shows a fragment of metope with a possible restoration, which is offered to show how some of the larger torso fragments and heads found may properly belong to the metopes.[2]

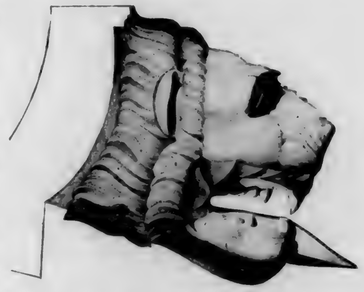


FIG. 62. — ARGIVE HERAEUM: MARBLE LION'S HEAD GARGOYLE AND WATER-SPOUT FROM SECOND TEMPLE. ONE FIFTH THE ACTUAL SIZE.

Before entering the temple, we may consider its plan more fully. The temple was a hexastyle-peripteros-pycnostyle, having six columns at each end, twelve on the side, and with intercolumniations of one and one half diameters. The restored plan is shown on PLATE XVII. The inside of the foundation is indicated by the dotted line which shows that the corner columns centre over a 45° line that connects the outer and inner angles of the foundation.[3] The *pteroma* was paved with limestone similar to that of the stylobate. These paving stones are shown square on the plan, although many were oblong; beneath them were breccia blocks which rested on the *poros* stones of the foundation. The walls of the cella were, I think, of *poros* stone, like the columns, and similarly plastered with stucco. The ceiling of the pteroma was coffered and formed of limestone, the sides of each lacuna being decorated with a fret ornament cut in the hard stone to a depth of two millimetres.[4]

The plan of the temple developed certain proportions, graphically illustrated on PLATE XIX., which I discovered after the completion of the plan of the restoration. The width of the cella is $\frac{3}{5}$ of 48 units, or $\frac{3}{5}$ of the width of the front of the temple between the axes of the end columns. The distance from the axis of the sixth column on the side to the anta of the cella wall is 36 units, which equals the height of the temple to under side of roof. The distance measures also 36 units from the same anta to a line tangent to the columns on the opposite side. Again a triangle with a height of 36 units and a base equal to the width of the cella will have a hypothenuse which, if swung around and added to the height, will give the total length of the cella.

The approach to the temple is by a ramp similar to that of the temple of Zeus at Olympia.

In Fig. 64 I have attempted a restoration of the interior of the temple.[5] The height

[1] Cf. Note on p. 117, and Introduction, pp. 21 ff.

[2] For the architectural sculpture see the next chapter.

[3] As it was more usual to have an uneven number of columns on the side of the temples of this period, I at first attempted a restoration of this one with thirteen side columns, but found afterwards, upon piecing together the fragments of the entablature, that twelve columns fitted exactly both the superstructure and the crepidoma. The intercolumniations equal one and one half diameters, making a pycnostyle, the proportion usual for the best fifth century work.

[4] I found stones from the ceiling and the crepidoma of the temple built into the walls of the Chapel of the Panagia near the village of Merbaka.

[5] For sections through the entablature see PLATE I., frontispiece of this chapter.

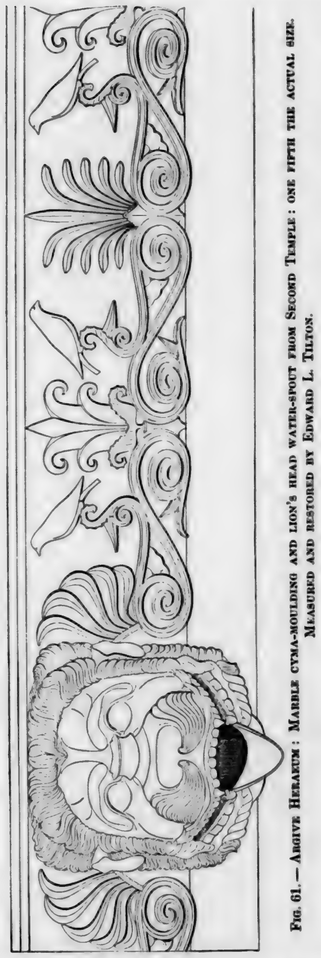


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The roof of the temple was covered with white marble tiles, which, we are told by Pausanias, had been used at Olympia about forty years earlier.[1] PLATE I. (Frontispiece of this chapter) shows the details. The width of the flat tiles was about 0.54 m. or $\frac{18}{12}$ units.

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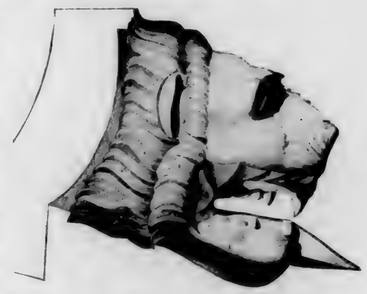


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[4] I found stones from the ceiling and the crepidoma of the temple built into the walls of the Chapel of the Panagia near the village of Merbaka.

[5] For sections through the entablature see PLATE I., frontispiece of this chapter.

from floor to ceiling as shown is about 8.60 m. The seated figure of Hera is based on the description of Pausanias (see note on p. 117, and above, pp. 21 ff.), and upon representations of the goddess found on Argive coins. It is interesting to note that her crown or στεφάνη was decorated with ornament which resembled the cyma-moulding described above.[1] The details of the throne are partly taken from Laloux's restoration of the statue of Olympian Zeus.

The interior columns in the *naos* I have restored as shown in Fig. 52, B. The *poros* stone capital for the lower column (Fig. 51, F) I found in the museum at Argos. It has no remains of channels, but it has square dowel-holes at top and bottom, and on opposite sides of the neck there are round holes, as though a grille of metal had been secured between the columns. The capital for the superimposed columns, also of *poros*

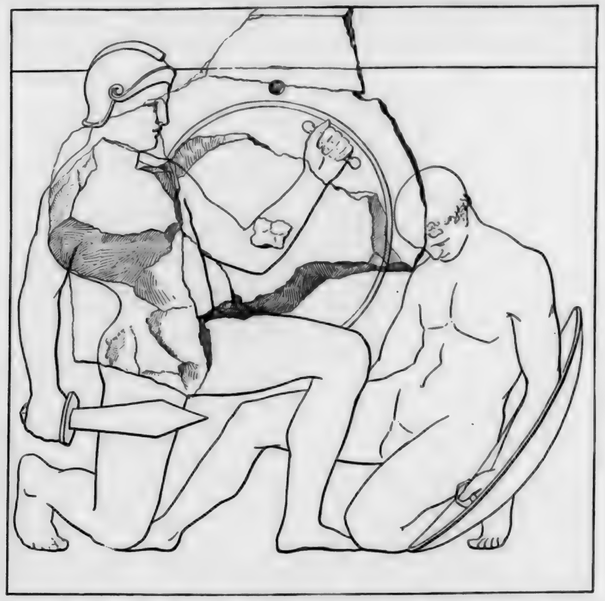


Fig. 63. — Argive Heraeum: Metope from the Second Temple, restored from fragment.

stone, I found lying in the West Building (VII). It has a profile almost straight, square dowel-holes, and a section cut out of the echinus, as shown in Fig. 51, L, as though a wooden upright had been fastened to the column.

[1] Cf. Waldstein, *Journal of Hellen. Studies*, XXI. (1901) pp. 31 ff.

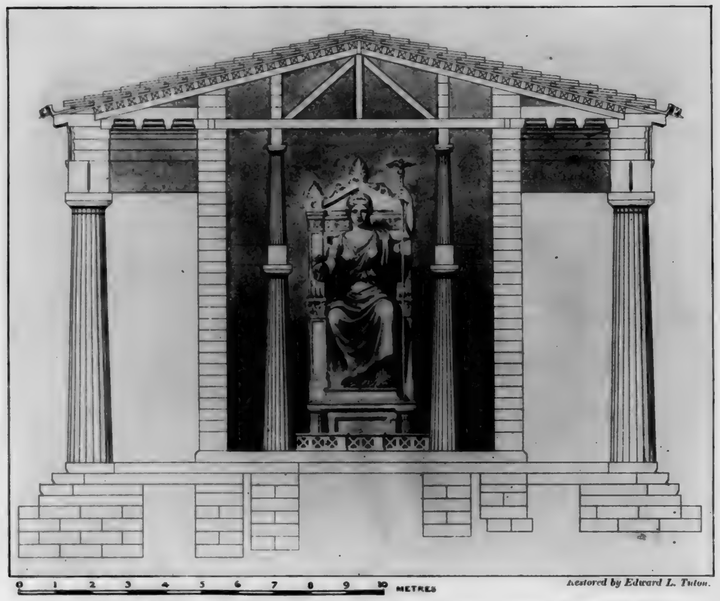


Fig. 64. — Argive Heraeum: Restored Section of Second Temple, showing Statue of Hera.
Note. — For the correct section through entablature see Plate I.

SOUTH STOA.

If we leave the Second Temple and turn to the right, we soon reach the head of the beautiful flight of steps which descends to the lower level and to the South Stoa (VI). (Cf. Plate IV.)

The actual state of the ruins is shown on Plates XX. and VII., and Figs. 57 and 65. On Plate XX. the height of the various objects is indicated by the shadows, which upon all the drawings are projected at 45°. The Stoa measures, inside the walls, 44.45 m. in length, including walls 46.09 m., and from the inside of the rear wall to the outside of the stereobate 12.74 m. The stereobate is 1.08 m. in width. The long axis of the Stoa is 16° 30′ south of east, and its level is 22.93 m. below that of the Old Temple. The rear wall is 21 m. south of the Second Temple foundation, and is nearly parallel to it. The face of the rear wall consists of light limestone, the joints are very close, and the tops of the stones are fastened together with clamps about 0.60 m. long of the double T-shape which were used in the fifth century B. C. and thus aid in establishing the date of the building. The existing wall has three offsets of 0.065 m., and the height of the first course above grade is 0.20 m., of the second 0.37 m., and of the top one 0.39 m. There are four projections from the rear wall (cf. Fig. 65) resembling pilasters and possibly intended to take trusses, although the projections do not all

from floor to ceiling as shown is about 8.60 m. The seated figure of Hera is based on the description of Pausanias (see note on p. 117, and above, pp. 21 ff.), and upon representations of the goddess found on Argive coins. It is interesting to note that her crown or στεφάνη was decorated with ornament which resembled the cyma-moulding described above.[1] The details of the throne are partly taken from Laloux's restoration of the statue of Olympian Zeus.

The interior columns in the *naos* I have restored as shown in Fig. 52, B. The *poros* stone capital for the lower column (Fig. 51, F) I found in the museum at Argos. It has no remains of channels, but it has square dowel-holes at top and bottom, and on opposite sides of the neck there are round holes, as though a grille of metal had been secured between the columns. The capital for the superimposed columns, also of *poros*

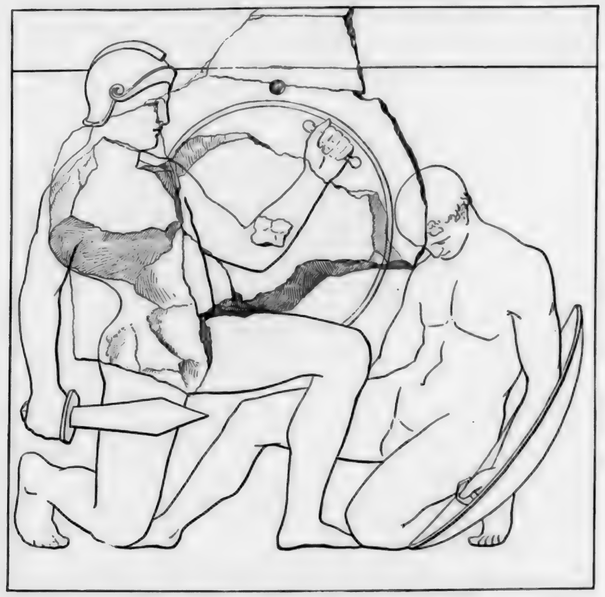


Fig. 63. — Argive Heraeum: Metope from the Second Temple, restored from fragment.

stone, I found lying in the West Building (VII). It has a profile almost straight, square dowel-holes, and a section cut out of the echinus, as shown in Fig. 51, L, as though a wooden upright had been fastened to the column.

[1] Cf. Waldstein, *Journal of Hellen. Studies*, XXI. (1901) pp. 31 ff.

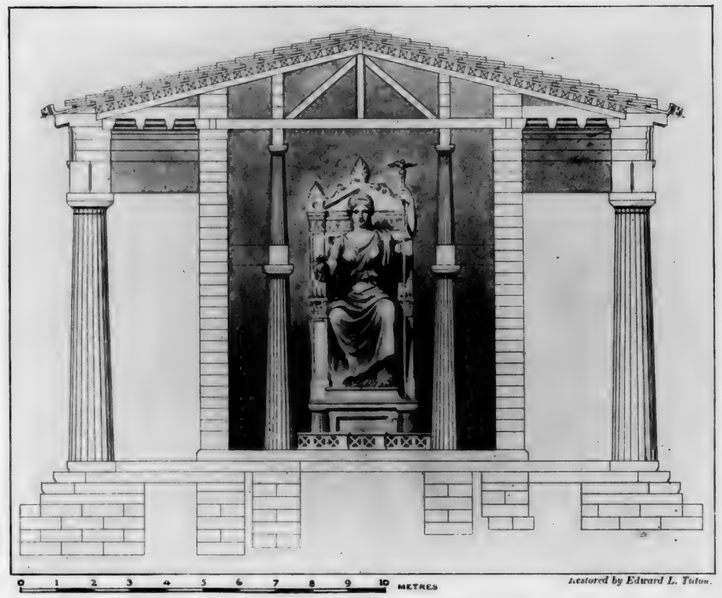


Fig. 64. — Argive Heraeum: Restored Section of Second Temple, showing Statue of Hera.

Note. — For the correct section through entablature see Plate I.

SOUTH STOA.

If we leave the Second Temple and turn to the right, we soon reach the head of the beautiful flight of steps which descends to the lower level and to the South Stoa (VI). (Cf. Plate IV.)

The actual state of the ruins is shown on Plates XX. and VII., and Figs. 57 and 65. On Plate XX. the height of the various objects is indicated by the shadows, which upon all the drawings are projected at 45°. The Stoa measures, inside the walls, 44.45 m. in length, including walls 46.09 m., and from the inside of the rear wall to the outside of the stereobate 12.74 m. The stereobate is 1.08 m. in width. The long axis of the Stoa is 16° 30′ south of east, and its level is 22.93 m. below that of the Old Temple. The rear wall is 21 m. south of the Second Temple foundation, and is nearly parallel to it. The face of the rear wall consists of light limestone, the joints are very close, and the tops of the stones are fastened together with clamps about 0.60 m. long of the double T-shape which were used in the fifth century B. C. and thus aid in establishing the date of the building. The existing wall has three offsets of 0.065 m., and the height of the first course above grade is 0.20 m., of the second 0.37 m., and of the top one 0.39 m. There are four projections from the rear wall (cf. Fig. 65) resembling pilasters and possibly intended to take trusses, although the projections do not all

exactly coincide with the columns in front of them. The lower portions of the end walls are also constructed of light limestone, forming socles or dados (as shown on PLATE XI.) to the height of the rear courses (cf. also Fig. 65). The base of the dado is 0.26 m. and the main course 0.86 m. in height. Over this are three courses of *poros* stone each 0.35 m. high. The Stoa was built against the retaining wall of the terraces which had been previously constructed of *poros* stone fastened together with T-clamps. The retaining wall is about two metres thick, and is strengthened by buttresses 2.00×1.80 m. extending into the bank. Still farther back are the two ancient graves, and a portion of the old peribolus wall described above (cf. PLATES XX. and VII.). On the floor of the Stoa there still remain nine limestone column-bases of the dimensions and spacing as are shown on the plan. The existing crepidoma or stereobate is carefully built of *poros* stone, the blocks averaging in size $1.20 \times 0.60 \times 0.35$ m. The architectural fragments that were found were sufficient to enable me to make a restoration of the Stoa which is shown on PLATE XXI. Owing to the variation in the width of several of the metopes, it seemed possible to restore the Stoa with either seventeen or nineteen columns along the front; the latter I am convinced is really the correct solution (PLATE XXI.), as this arrangement makes every other column of the front coincide with a column in the centre, and it makes the relation of diameter to intercolumniation about as 1 is to $1\frac{1}{2}$, a pycnostyle arrangement like that of the Second Temple, while the wider metopes fit on the end walls.

The profiles of the columns resemble those of the temple (cf. PLATE XXII. and Fig. 52, D).

Four interior bases had column-drums *in situ*, the most eastern base having two drums erect, while the remaining drums and capital of this column, all of *poros* stone, were lying prostrate as is shown in section (PLATE XI. and Fig. 65). Traces of stucco painted yellow were apparent on the drums, and red paint on the echinus of the capital. Vestiges of stucco were visible also on the entablature.

I shall letter the drums downward from the top as A, B, C, D, E, F, beginning with the capital, and give the height and the bottom diameter of each measured between the chords of the channels.

	DIAMETER.	HEIGHT.
Capital	.663	.458
A	.704	.964
B	.743	1.025
C	.78	1.015
D	.812	1.015
E	.846	1.03
F	.87	.85
Total height of columns		6.357 m.

— which is exactly $19\frac{1}{2}$ units of 0.326 m. each.

The height of the column is equal to 7.30 diameters of the base, which at first appears out of proportion for Greek work of this period, but by referring to the section (PLATES XI. and XXII.) it will be observed that these interior columns support only a wooden roof, whereas the outer columns are one drum less in height, or 5.342 m., which is about 6.16 diameters.[1]

[1] At Olympia the interior columns of the Bulenterion are 7.70 diameters in height and the columns of the front in the Echo Colonnade are 6.40 diameters high, the diameter being measured just above the plinth. The Leonidaeum columns are 6.42 diameters high.

Some of the column-drums measure one centimetre higher on one side than on the other, indicating that they inclined slightly inwards. The drums had dowel-holes at both top and bottom, about 0.10 m. square and 0.10 m. deep, with an offset. The capitals had similar dowel-holes and mason's scratch-marks to show the centres. The abacus is 1.03 m. square and 0.18 m. high; the echinus, annulets, and neck together, 0.278 m. in height.

The entablature of *poros* stone, stuccoed and painted, and the cyma, with its fillet, was of terra-cotta. The epistyle was 0.71 m. high, and was made up of two stones in thickness 0.426 m. each, together equaling the diameter of the column at its base. The triglyphs were 0.77 m. high.

The top of the epistyle had a scratch-mark to show the location of metope, 0.045 m. back from the face of the fillet. One of the epistyle blocks had on its face under the



FIG. 65. — ARGIVE HERAEUM: VIEW LOOKING EAST ON THE SOUTH STOA (VI).
Note the fine rear wall with its pilaster-like projections, and the column-drums and bases. Mount Arachnaeum shows in the centre distance.

centre of a triglyph a small hole which may have been made by a nail that secured a bronze or other ornament.

It is interesting to note that the unit of measurement of the temple, equal to 0.326 m., prevailed throughout this Stoa.

The clue to the restoration is given by a cornice (*geison*) block whose mutules were 0.475 m. wide and spaced 0.097 m. apart; and as a mutule is the width of a triglyph and every alternate mutule centres over a metope, we have the width of the triglyph 0.475 m., and of the metope $0.097 + 0.475 + 0.097$ m. = 0.669 m., making the distance from centre to centre of the triglyphs $0.475 + 0.669$ m. = 1.144 m. Twice this, or 2.288 m., gives the spacing between column centres, but 2.288 m. is seven units (within six millimetres

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or one fourth of an inch). The distance from each end column to the outside of the anta is a half triglyph more, or 2.52 m. = $7\frac{8}{12}$ units, which gives a total as follows: —

Spacing at ends	$7\frac{8}{12} \times 2 =$	$15\frac{4}{12}$ units
Spaces between columns	$18 \times 7 =$	126 "
		$141\frac{4}{12}$ "

$141\frac{4}{12}$ units at 0.326 m. equals 46.07 m. This is only two centimetres (three fourths of an inch) less than the measurement of the actual ruins given above, viz.: 46.09 m. This gives nineteen columns to the front or one opposite each interior column and one opposite each space between.

For the end walls a corner triglyph measured 0.428 m. wide on one face and 0.363 m. on the other. I found that eleven times 1.144 (the width of triglyphs and metope as above) plus 0.428 gave 13.01 m. which coincided with the actual measurements of the ruins. This distance, 13.01 m., furthermore, equals 40 units.

To return to the front, the entire height of the order is, as before shown: —

Columns	5.342 m.
Epistyle	.71
Triglyph	.77
Cornice from top of beak-moulding to bottom of mutule which lines with the top of triglyphs	.295
	7.117 m.

This is nearly 22 units (22 units would be 7.172 m.), and I found the difference accounted for by a terra-cotta fillet which fitted into the cut above the beak-moulding as shown in the detail on Plate XXII. The fillet is described below.

The height of the entablature, which is made up of the sum of epistyle, triglyph, and cornice, as above, is 1.775 m., and is thus one third the height of the columns.

The cyma was .20 m. high, of colored terra-cotta, shown in detail on Plate XXIII., G.

The different pieces of terra-cotta cyma probably were secured by a rod running through the hole. A violet line, 0.023 m. wide, along the under side showed that the cyma overhung the fillet so far.

The fillet below the cyma was a flat terra-cotta band, 0.07 m. high, decorated with a fret similar to that attached to the antefix (Plate XXIII., B). The soffit of this band was painted for a distance of .08 m. back from its face, showing that it overhung the beak-moulding of the cornice, and it had a projection cast on it which fitted into a cut on the top of the cornice and was thereby kept in place. (Cf. detail section, Plate XXII.) I found a fragment of a painted terra-cotta lion's head, from which I restored the entire head, as shown in the upper right-hand corner of Plate XXII., and assumed that it belonged to this Stoa. A small piece of a ridge-antefix similar in design (Plate XXIII., C) also may have belonged to this building.

THE STEPS.

Our attention is next naturally directed to the broad flight of steps which lead up to this Stoa from the south and continue upward along the east side to the level of the temple. The length of the flight in all was 81 m., or about 25 units; its run about 30 m. and its rise about 13 m. The eastern retaining wall (shown on Plate XIII., A) resembled that of Building IV., the stone work being laid in courses where two wide courses alternate with one narrow course. At an obtuse angle from this wall ran another in the form of high steps, each course being about 0.75 m. wide and of the same height. The remains of the main flight of steps under consideration consist of *poros* stones carefully jointed but without clamps. The finished steps were probably limestone. The width of the treads measured on the *poros* foundations is about 0.45 m., and the rise 0.32 m. Portions of the foundation stones were, fortunately, *in situ* at the eastern end and half way up the slope, which indicated that the steps had been continued to the temple terrace.

In my restorations I have placed an altar at the head of the steps on the rectangle of old walls, upon which the *Phylakeion* now stands, and various cuttings in the stones imply that other altars and stelae may have been placed at different levels on the steps.

WEST BUILDING.

The next building in order of position is the so-called West Building (VII), of which I have attempted two free restorations, one shown in the perspective on Plate VI. and the other in Fig. 66, but owing to the insufficiency of data, for neither of them can I claim any certainty. The ruins are, however, of interest.

The orientation of the building is 8° 30′ east of north, and its level is 21.35 m. below that of the Old Temple. The foundations measure over all 33.30 m. along the east side and 30.40 m. along the south; allowing for offsets, the main walls must have measured almost, if not exactly, 100 × 90 units of 0.326 m. each. It is much older than the Second

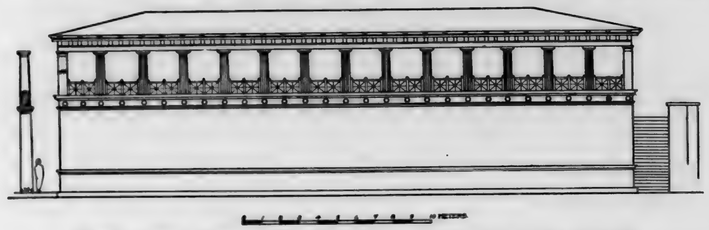


Fig. 66. — Argive Heraeum: West Building; free restoration of the elevation.

Temple and probably dates from the sixth century B. C., as is indicated by (*a*) the paving stones in the central court, (*b*) the dove-tail clamps, (*c*) the columns whose channels are fourteen and sixteen in number instead of twenty, and (*d*) the spread of the echinus of the capitals, as is shown in detail in Fig. 51, E, I, and K. (See Plate XXIV.)

The building lay outside the original walls of the peribolus on the south side of an early road which led up to the sanctuary. The ground for the building had been leveled by cutting away the native conglomerate rock (at the northeast corner to a depth of nearly five metres), and by filling in the lower sides against retaining walls previously constructed. The walls remaining along the south (Plate XIII.) and half of the eastern sides are of fine light limestone with tooled faces and carefully fitted joints. The backs of the stones are irregular, having been buried in the earth. The western retaining wall

was built of larger blocks many of which had been later removed, thereby causing the partial destruction of the terrace. These walls on the west side appear to be older than the others, and may have belonged to an earlier Stoa to which was added later the rest of the building. The foundation stones of the north and east sides are of regular *poros* blocks similar to those of the temple and as carefully fitted and leveled (cf. PLATE XXV.). The plan of the building comprised a peristyle court with five columns on the north and south sides and six on the east and west, counting the corner columns twice. The positions of several of these columns are shown by the circles on the limestone base course. The distances between the centres of corner columns measure 13.10 m. and 10.90 m., or about 40 and 33 units. The main entrance to the building was on the north side, where a limestone sill 0.75×1.73 m. has two dowel-holes about one metre apart and 0.35 m. from the stone jambs, indicating wooden casings (see the plan). The door opens into a vestibule about 2.50 m. wide and 6.50 m. long leading to the central court. Three rooms, each about 6×8 m., occupy the remainder of the north side of the building. On the other three sides the roof-span is supported by columns whose spacing is somewhat irregular. On PLATE XXIV. the present state of the building is shown; on PLATE XXVI. I show a plan and section restored, and in Fig. 52, C, a detail of the columns.

The original destination of the building is uncertain, and conjecture has made it a gymnasium. Its location, however, and arrangement lead me to think that it may have been a hospital especially for women, which would be a natural accessory to the Heraeum, whose goddess was the special patroness of births and marriages. In the two rooms flanking the vestibule were benches or couches, shown on PLATE XXIV. These couches consist of upright blocks of limestone rebated 0.05 m. deep into the base course of the rooms. The uprights are 0.25×0.75 m. and 0.55 m. high with dowel-holes in their upper surfaces by which the horizontal slabs were secured. Lead is still visible in one of the dowel-holes. The distances between the uprights varies, as is shown on the plan, from 1.22 to 1.45 m., to which the addition of twice 0.25 m., the width of the uprights, makes the total length 1.72, 1.95 m. The width of couches, as similarly indicated, was one metre. It is possible that the horizontal slabs overhung the supports both in length and width, and they may have been of wood, since I found no stone which fitted the position.[1]

The most easterly of the three rooms has no indications of stone couches, and may have been used as a strong room to keep the gifts, money and tokens, received from the patients. It had a noteworthy limestone door, a fragment of which is shown on PLATE XXVI. (cf. PLATE XXV.). The pivot was 0.10 m. in diameter, cut from the solid stone of the door, and originally it revolved upon a bronze plate let into the dowel-holes in the limestone door-sill.[2]

The right side of the door-sill is worn more than the left, indicating that the corresponding valve of the door was more frequently used. The dimensions of the door-sill are shown on PLATE XXVI., and the sunken cuts at either end indicate that there were wooden door-jambs.[3] The doors were evidently fastened by a bolt which slipped into the rebate shown on the face of the sill. The stone step inside of this room was

[1] For couches of similar construction found in a rock-cut grave on Aegina see *Expédition de Morée*, III. p. 40. Also Guhl and Koner, *Life of the Greeks and Romans*, Figs. 102 and 103.

[2] For a similar stone door see the marble door from a grave at Palititza now in the Louvre; Heuzey, *Mission Archéologique de Macedoine*, pl. xxi.

[3] For the arrangement of wooden door-jambs and casings, see Durm, *Die Baukunst der Griechen*, and also the Olympian Heraeum in the German work on Olympia.



FIG. 67. — ARGIVE HERAEUM: VIEW LOOKING NORTHWEST UPON THE NORTHWEST BUILDING (VIII). Mycenae lies among the hills in the right distance.

made of pieces which were secured together by metal clamps. Flanking the doorway on the east side are two *poros* stones with centres carefully hollowed out, although for what reason is uncertain.

In the central court we find an old paving of irregular blocks not unlike that on the Old Temple terrace. Over this older paving was a better one of limestone blocks, about flush with the podium or stylobate, with which, in the plan of the restoration, I have shown the entire building to have been paved. From the court a stone drain carried the water beneath the floor and through the south wall.

The only column-drum remaining upright is on the northeast base (cf. PLATE XXV.). It measures 0.58 m. in diameter between the chords of the opposite flutings, which are sixteen in number.

The only fragments I found with which to attempt a restoration were the small *poros* stone capitals (Figs. 51, E, I, and K), each with only fourteen channelings, the capital B with sixteen channelings, and the pieces of entablature (PLATE XXVI.), cornice, triglyph, and epistyle stones; and as regards the cornice block, I am in some doubt, since the shape of the clamps would indicate a later building. This apparent discrepancy may be accounted by supposing that the building had been, at a later time, reconstructed or repaired. In other respects, the stone might have belonged to this structure. Another block which resembles it has the earlier dovetail-shaped dowel-hole, and still another has a very large T-shaped hole, as though to take a dowel of wood instead of metal. The lifting-holes are shown on the top of the stone. The mutules alternate with rows of five and four guttae, and I found one which had been repaired by fastening a gutta in place

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[1] For couches of similar construction found in a rock-cut grave on Aegina see *Expédition de Morée*, III. p. 40. Also Guhl and Koner, *Life of the Greeks and Romans*, Figs. 102 and 103.

[2] For a similar stone door see the marble door from a grave at Palititza now in the Louvre; Heuzey, *Mission Archéologique de Macedoine*, pl. xxi.

[3] For the arrangement of wooden door-jambs and casings, see Durm, *Die Baukunst der Griechen*, and also the Olympian Heraeum in the German work on Olympia.



FIG. 67. — ARGIVE HERAEUM: VIEW LOOKING NORTHWEST UPON THE NORTHWEST BUILDING (VIII). Mycenae lies among the hills in the right distance.

made of pieces which were secured together by metal clamps. Flanking the doorway on the east side are two *poros* stones with centres carefully hollowed out, although for what reason is uncertain.

In the central court we find an old paving of irregular blocks not unlike that on the Old Temple terrace. Over this older paving was a better one of limestone blocks, about flush with the podium or stylobate, with which, in the plan of the restoration, I have shown the entire building to have been paved. From the court a stone drain carried the water beneath the floor and through the south wall.

The only column-drum remaining upright is on the northeast base (cf. PLATE XXV.). It measures 0.58 m. in diameter between the chords of the opposite flutings, which are sixteen in number.

The only fragments I found with which to attempt a restoration were the small *poros* stone capitals (Figs. 51, E, I, and K), each with only fourteen channelings, the capital B with sixteen channelings, and the pieces of entablature (PLATE XXVI.), cornice, triglyph, and epistyle stones; and as regards the cornice block, I am in some doubt, since the shape of the clamps would indicate a later building. This apparent discrepancy may be accounted by supposing that the building had been, at a later time, reconstructed or repaired. In other respects, the stone might have belonged to this structure. Another block which resembles it has the earlier dovetail-shaped dowel-hole, and still another has a very large T-shaped hole, as though to take a dowel of wood instead of metal. The lifting-holes are shown on the top of the stone. The mutules alternate with rows of five and four guttae, and I found one which had been repaired by fastening a gutta in place

with lead. The epistyle block also has but five guttae under the regula. The face of the cornice is plain and may have been covered with terra-cotta like that of the Treasury of Gela at Olympia, since a nail-hole is seen on one of the cornice stones.

The soffits of the cornice bear evidences of red paint. The cyma may have been as on PLATE XXIII., D.

The southern outlook over the plain from the site is so beautiful that one might expect



FIG. 68. — ARGIVE HERAEUM: VIEW LOOKING WEST FROM THE NORTHWEST BUILDING (VIII). The men are excavating the Roman Building (IX).

an open colonnade on this side, but the existing walls evidently did not support columns. In order to harmonize the idea of a wall with a colonnade, I have made a sketch as a suggestion in Fig. 66.

THE NORTHWEST BUILDING.

In the Northwest Building (VIII) there is still less to guide one in attempting a restoration (cf. Fig. 67, and PLATE XXVII.). The rough walls are built over limestone bases, which indicate an earlier Stoa. It is possible also that this may have been the site of an ancient Propylaeum. I think the capital P, Fig. 51, shown again in Fig. 52, F, may have belonged to the late building on this site.

THE ROMAN BUILDING.

The remains of the Roman Building (IX) (PLATES XXVIII. and XXIX., and Fig. 68), are somewhat confused, but the construction of the floor is interesting. An earlier Greek structure had occupied the eastern part of this site, the remains of which are a finely cut limestone wall, door-sill, *poros* stone foundation, and a fragment of mosaic floor,

shown in detail on PLATE XXIX., W. The Roman floor-level was about 0.56 m. above that of the Greek. On the plan in PLATE XXVIII. the four irregular circles are indications of what appear to be cisterns, which were in depth from 1.50 to 3 m.

The principal interest in the building centres in the hypocaust or hollow floor and

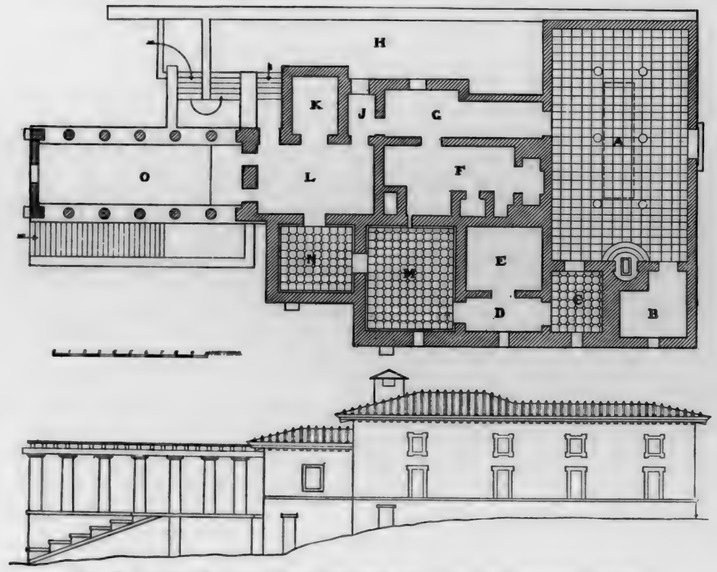


FIG. 69. — ARGIVE HERAEUM: ROMAN BUILDING (IX): PLAN AND ELEVATION RESTORED.

wall construction, through which warmed air circulated as in other Roman buildings, notably the baths at Pompeii. On PLATE XXIX., A and G, are shown the actual plan and a restored section. The floors were first covered with flat tiles about 0.60 m. square, upon which were built piers about 0.70 m. high of smaller square or round tile and in one case of stone. On these piers large tiles were laid, upon which was spread the concrete about 0.17 m. thick, and all was finished with a floor of mosaic or marble tile. The hollow walls were made by special flat tiles about 0.49 m. square by 0.02 m. thick, with projecting lugs, as is shown by a fragment, PLATE XXIX., A, and the section G.

A coat of plaster was first applied to the wall of the building to even the surface and to take the points of the tiles, which left an air space of about 0.06 m. The tiles were then covered and held in place by a coat of plaster 0.085 m. thick.[1]

Small passages or ducts through the walls were left between the rooms and under the floors to permit the warmed air to circulate throughout the various apartments.

[1] The Stabian Thermae at Pompeii have the floors and walls of the tepidarium constructed as above described, but the walls of the calidarium are made of tile pipe rectangular in section, measuring inside about 0.06 by 0.10 m. This pipe construction starts from the top of the hollow floor, and is carried up the walls around the vaulted ceiling and down to the floor again, thus permitting a complete circulation for the hot air.

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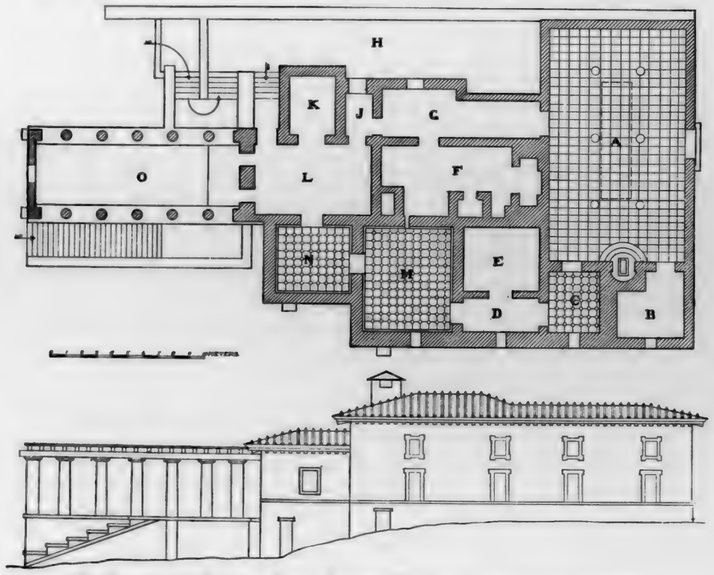


FIG. 69. — ARGIVE HERAEUM: ROMAN BUILDING (IX): PLAN AND ELEVATION RESTORED.

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The central room on the plan (PLATE XXVIII.) is where the fire was probably made, as it is supplied with what appears to be a smoke-flue, and there are vestiges of burnt matter.

Many of the rooms have floors of plaster, which is spread directly on the earth with rounded plaster-angles between floors and walls, indicating that the walls were also plastered. Some of these compartments may have been used as reservoirs and others as plunge-baths. The sketch-restoration (Fig. 69) is merely a suggestion and makes no claim to accuracy. In the plan I have assumed that the purpose of the various rooms may have been as follows: —

A. Atrium.
B. Room for Attendant.
C, M, and N, and possibly E. Warmed rooms.
D, G, J. Passages.
F. Kitchen and Furnace-room.
K. Sleeping chamber.
L. Anteroom.
O. Cisterns or tanks for swimming.

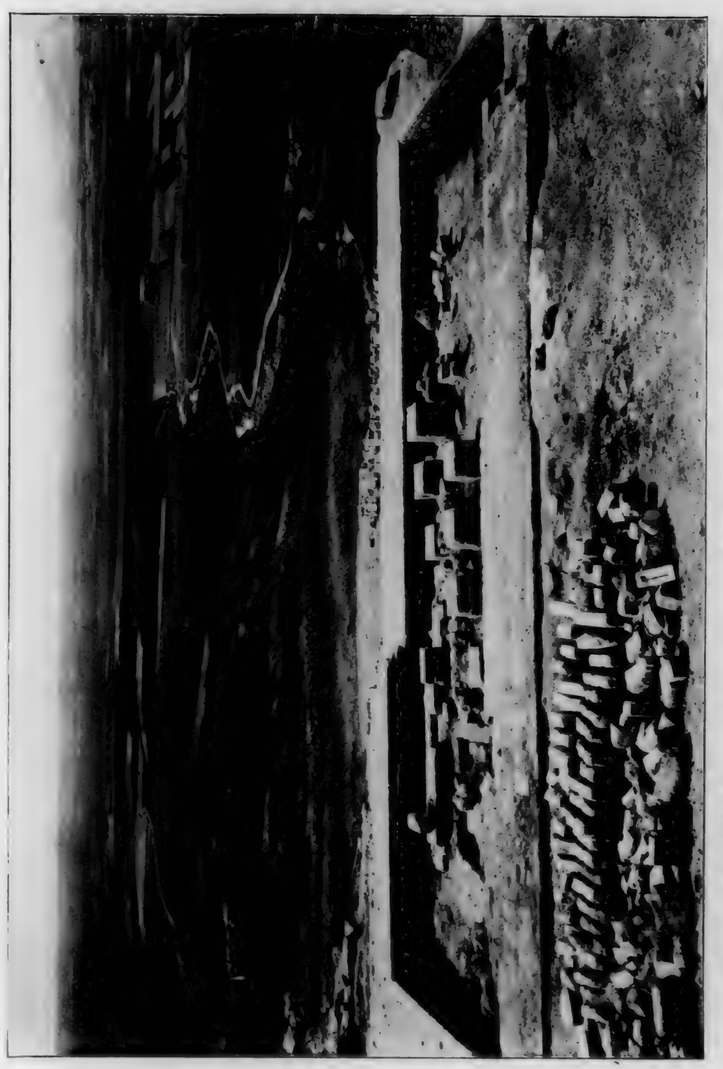
LOWER STOA.

South of the Roman Building are the remains of an L-shaped building (X), one leg measuring over all 74.33 m. and the other about 52 m. in length. At the extreme southern end a retaining wall was built which was continued beyond the line of the building, and it may have been the original intention to carry the building around one or both of the two open sides. It may have formed a court for herding cattle before the sacrifice.

The remains are insufficient to justify an attempt at restoration. The outer walls are too narrow for column foundations, and indicate that the building was inclosed with a central row of columns to support the roof. See the plan of site restored, PLATE V.

CISTERNS.

Several cisterns or baths are shown on the general plan, PLATE IV.: A, west of the Old Temple; B, C, D, in the Upper Stoa (II); E, E*a*, east of the Lower Stoa. This last is underground and cross-shaped. F, a small bath south of E; in this chamber a strigil was found. There were several drains. The one dotted on the plan between the Upper Stoa and the Temple was constructed of tile pipe, a detail of which is given on PLATE XXIX., Y. The underground aqueducts south of the site have been referred to by Dr. Waldstein (above, p. 16).



ARGIVE HERAEUM. — VIEW OF THE SECOND TEMPLE (V), LOOKING SOUTH FROM THE CYCLOPEAN WALL

The Gulf of Argos is on the horizon. The town of Argos is at the foot of the hill (Larisa) in the right distance. The village of Psalí is visible on a line thin side of Argos, while the villages of Chonica and Asyphi are respectively at the left and toward the centre of the picture. The two meandering roads lead down from the Heraeum to the main highway, which just visible, cuts the picture almost horizontally. This main road comes, on the right, from Mycenae, and goes thence easterly to Chonica, where it branches to Argos, Midea, Tiryns, and Nauplia.

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THE ARGIVE HERAEUM

ARGIVE HERAEUM — VIEW OF THE SECOND TEMPLE (V.) LOOKING SOUTH FROM THE CYCLOPEAN WALL

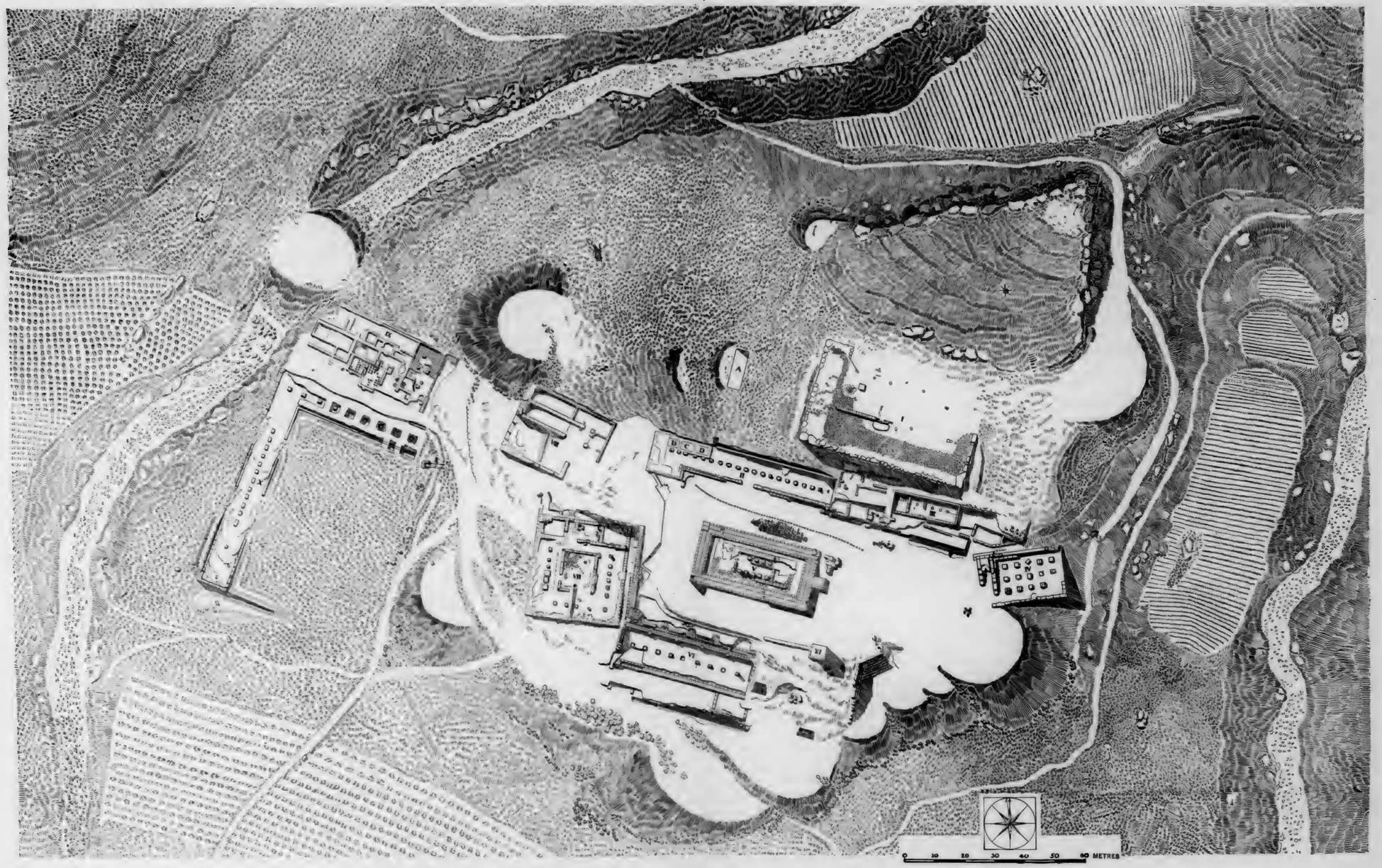
The Gulf of Argos is on the horizon. The town of Argos is at the foot of the hill Larissa on the right distance. The village of Prasi is visible near the coast at Argos, while the villages of Charvati and Aspridi are conspicuous at the left and toward the centre of the picture. The two conical-looking peaks lead down from the Heraeum to the town highway which just visible, cuts the picture almost horizontally. This ascent road connects on the right from Mycenae and goes thence centrally to Argos, where it ascends to Larissa. Modern Trozen and S. Angelos

ARGIVE HERAEUM.—VIEW OF THE SITE FROM THE SOUTH





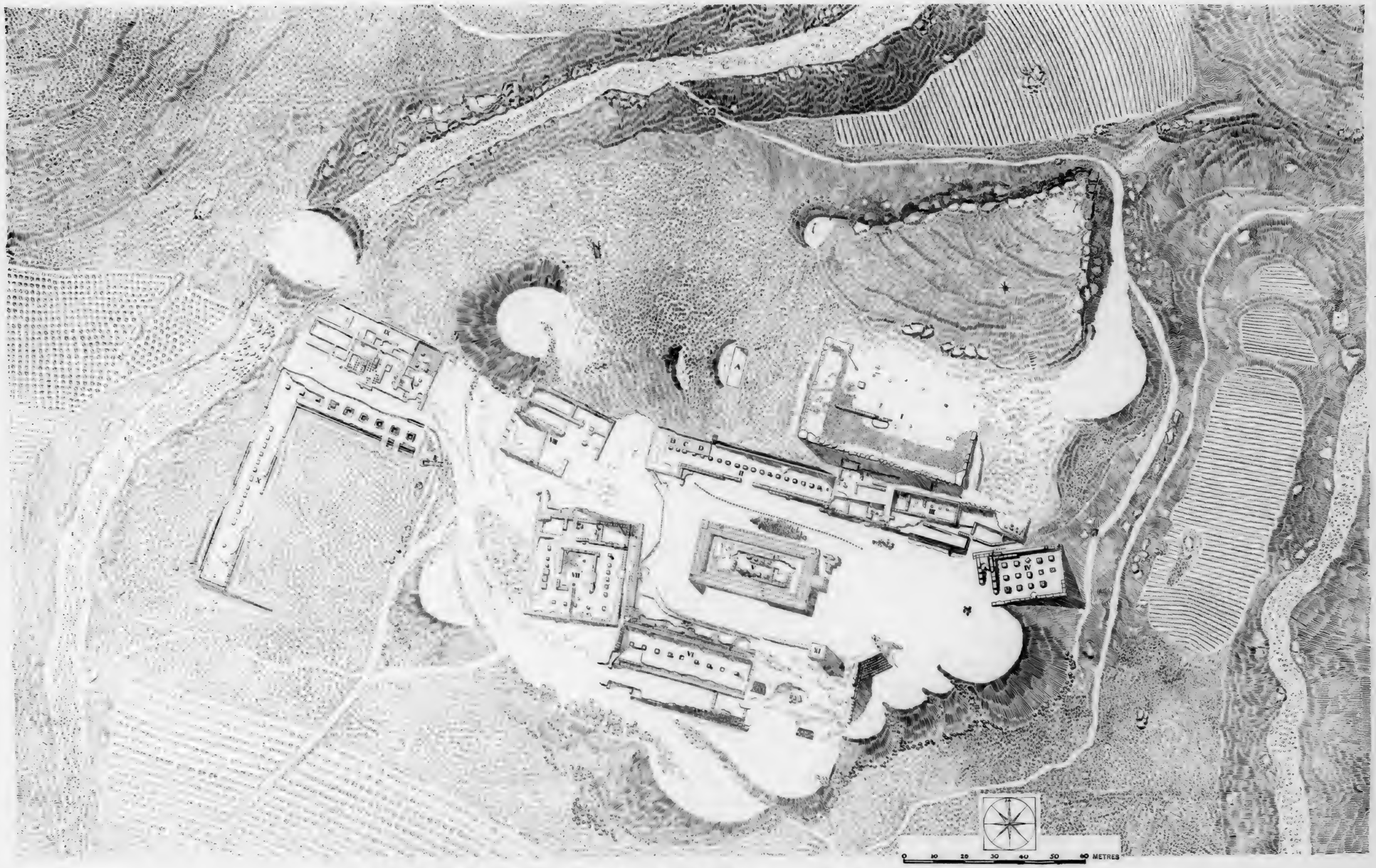
ARGIVE HERAEUM. — VIEW OF THE SITE FROM THE SOUTH



ARGIVE HERAEUM. — GENERAL PLAN OF THE SITE: ACTUAL STATE AFTER EXCAVATION

Drawn and surveyed by Edward L. Tilton, Architect

I. Old Temple
II. North Stoa
III. Northeast Stoa
IV. East Building
V. Second Temple
VI. South Stoa
VII. West Building
VIII. Northwest Building
IX. Roman Building
X. Lower Stoa
XI. *Plylakeion*
A, B, C, D, E, F. Cisterns and Baths

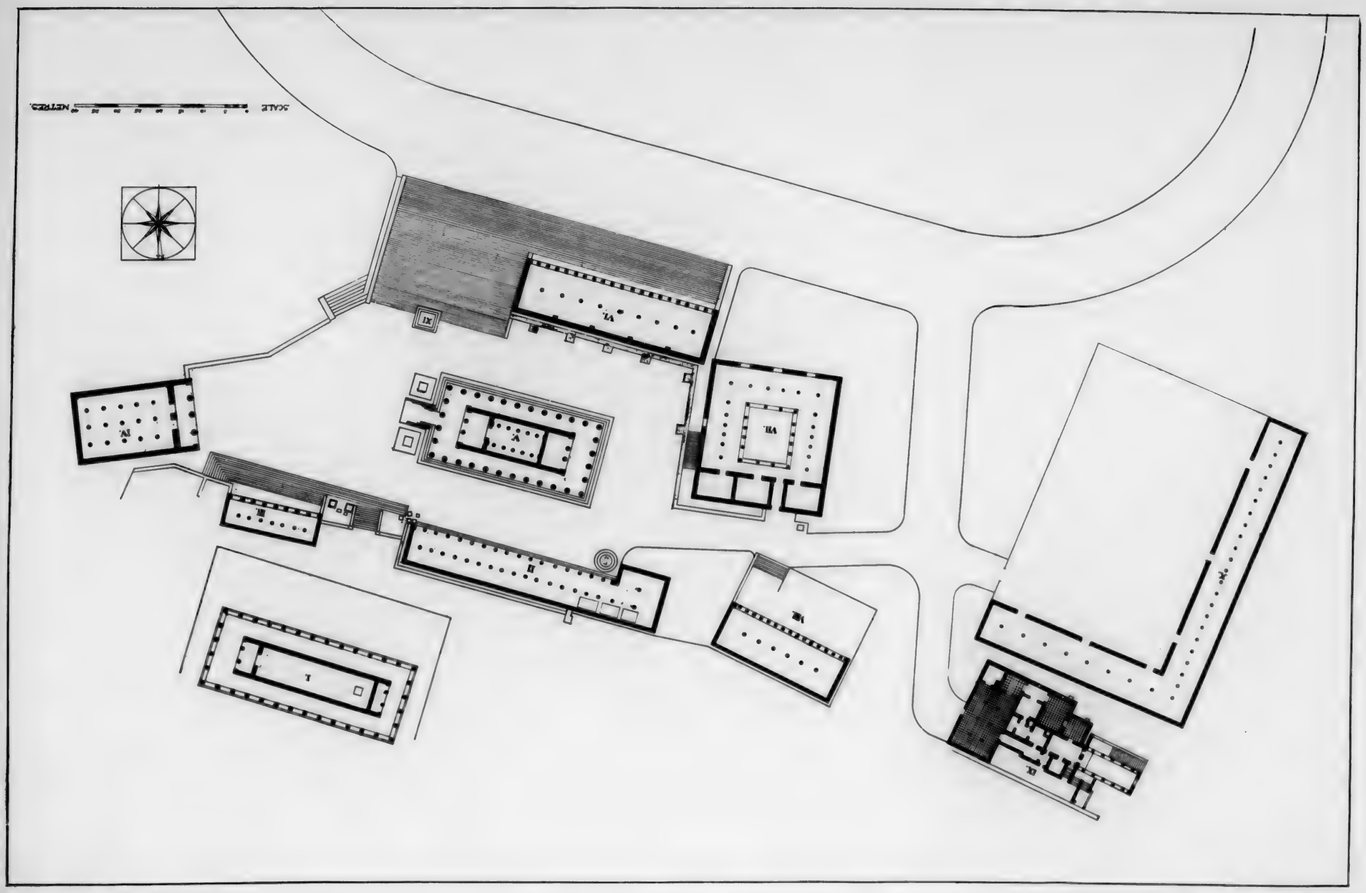


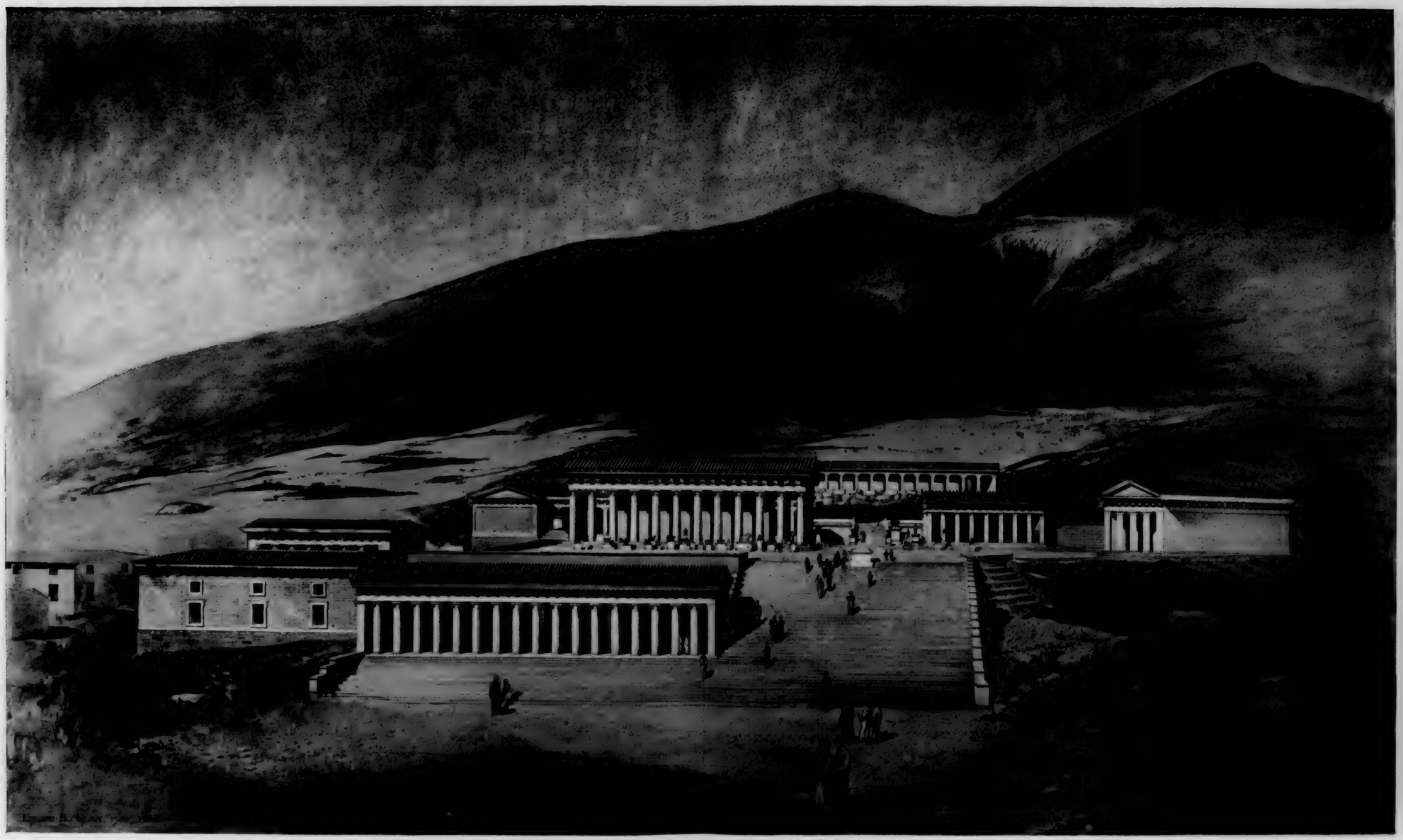
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Drawn and surveyed by Edward L. Tilton, Architect

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IV. East Building
V. Second Temple
VI. South Stoa
VII. West Building
VIII. Northwest Building
IX. Roman Building
X. Lower Stoa
XI. *Plylakeion*
A, B, C, D, E, F. Cisterns and Baths

ARGIVE HERAEUM — GENERAL PLAN OF THE SITE: RESTORED





ARGIVE HERAEUM. — RESTORATION IN PERSPECTIVE

By Edward L. Tilton, Architect



ARGIVE HERAEUM. — RESTORATION IN PERSPECTIVE

By Edward L. Tilton, Architect



ARGIVE HERAEUM. — VIEW LOOKING NORTHEAST UPON THE FLIGHT OF STEPS

The South Stoa (VI) and the Second Temple are above, beyond which the Cyclopean wall of the Old Temple terrace is visible, and Mount Euboea above all. The *Phylakeion* is on the right.

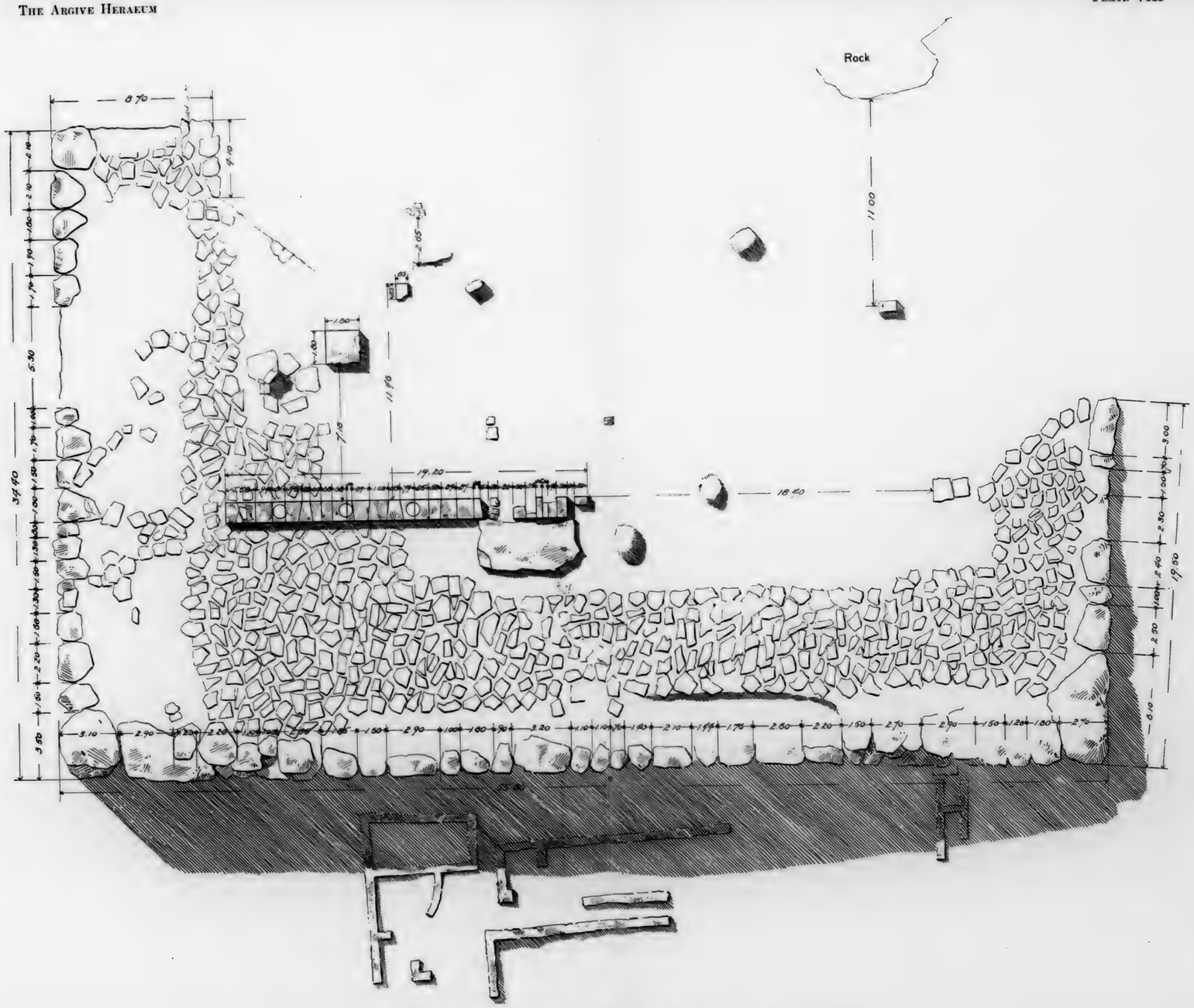
NOTE. — Part of the old *peribolus*-wall is visible at the left, just above the rear wall of the South Stoa; here were found the Mycenaean graves. At the right of the picture, and half way up the slope, is seen a portion of the steps which prove the flight had been continued to the terrace of the temple.



ARGIVE HERAEUM. — VIEW LOOKING NORTHEAST UPON THE FLIGHT OF STEPS

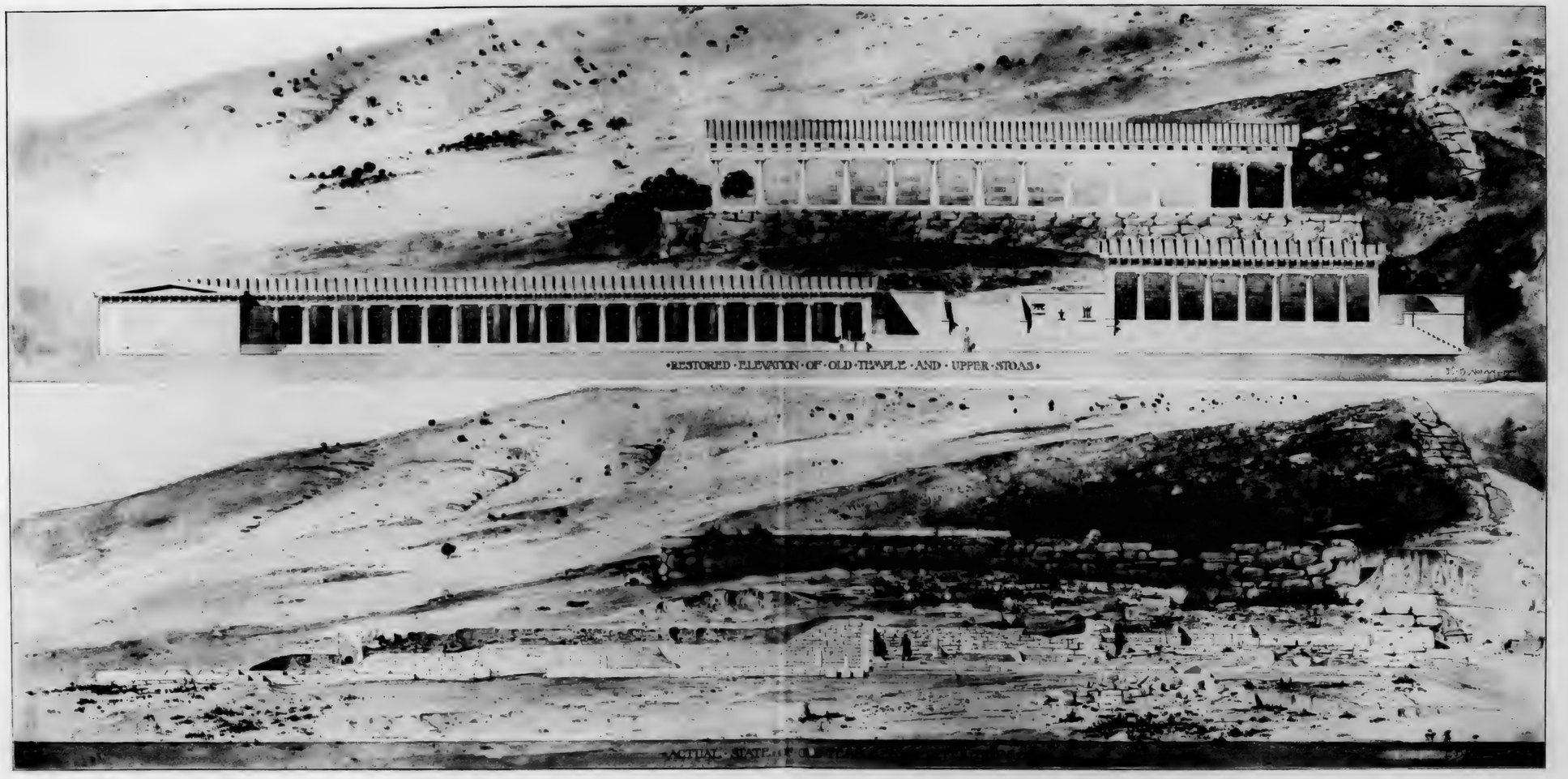
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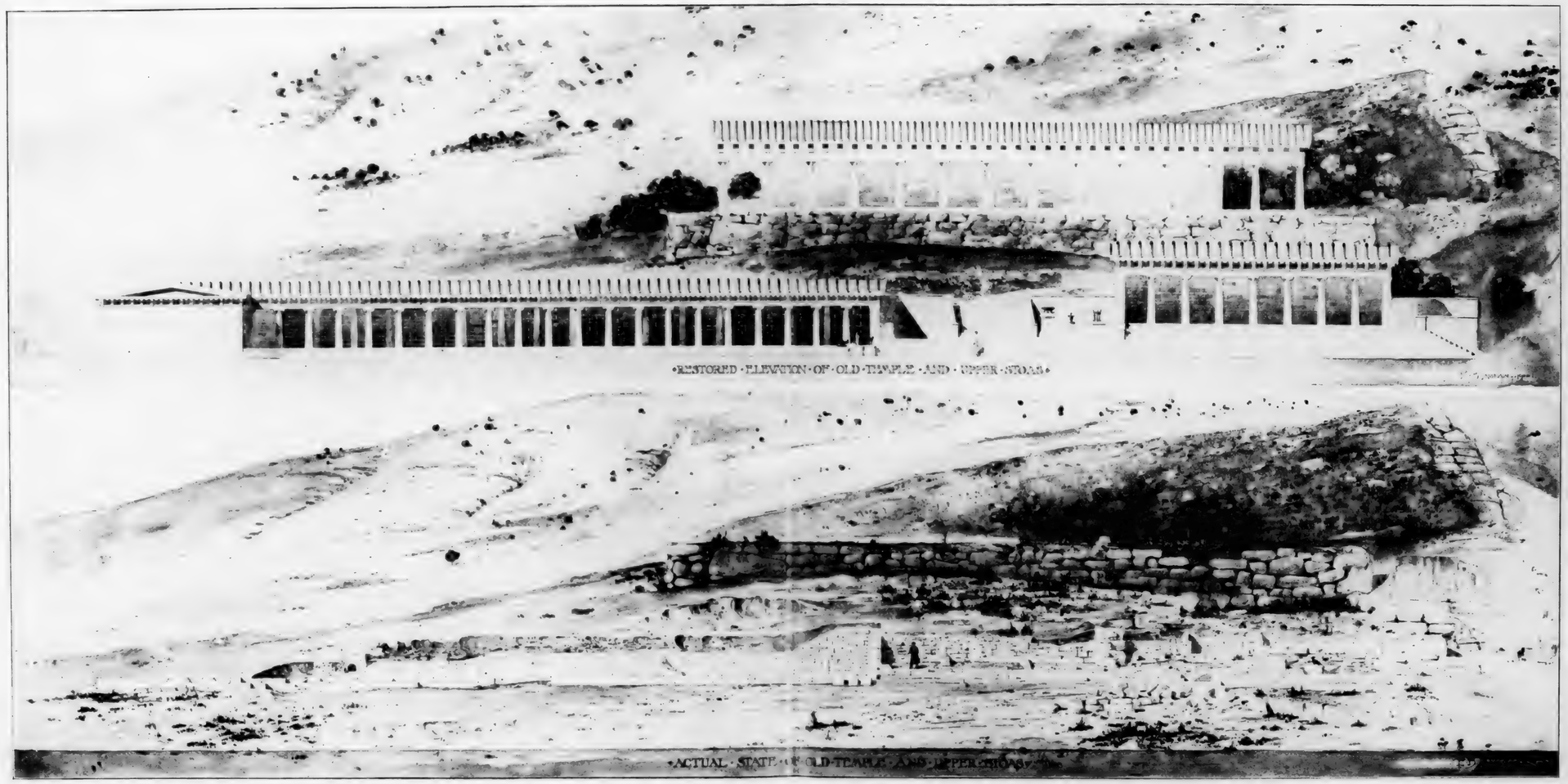
ARGIVE HERAEUM. — OLD TEMPLE PLATFORM: ACTUAL STATE

Measured by Edward L. Tilton



ARGIVE HERAEUM. — THE OLD TEMPLE AND STOAS II. AND III.: ACTUAL STATE AND RESTORATION

Measured and Restored by Edward L. Tilton



ARGIVE HERAEUM. — THE OLD TEMPLE AND STOAS II. AND III.: ACTUAL STATE AND RESTORATION

Measured and Restored by Edward L. Tilton



ARGIVE HERAEUM. — VIEW LOOKING SOUTHWEST UPON THE REMAINS OF THE OLD TEMPLE AND ITS PLATFORM

The town of Argos is at the base of the hill (Larisa) in the left distance.

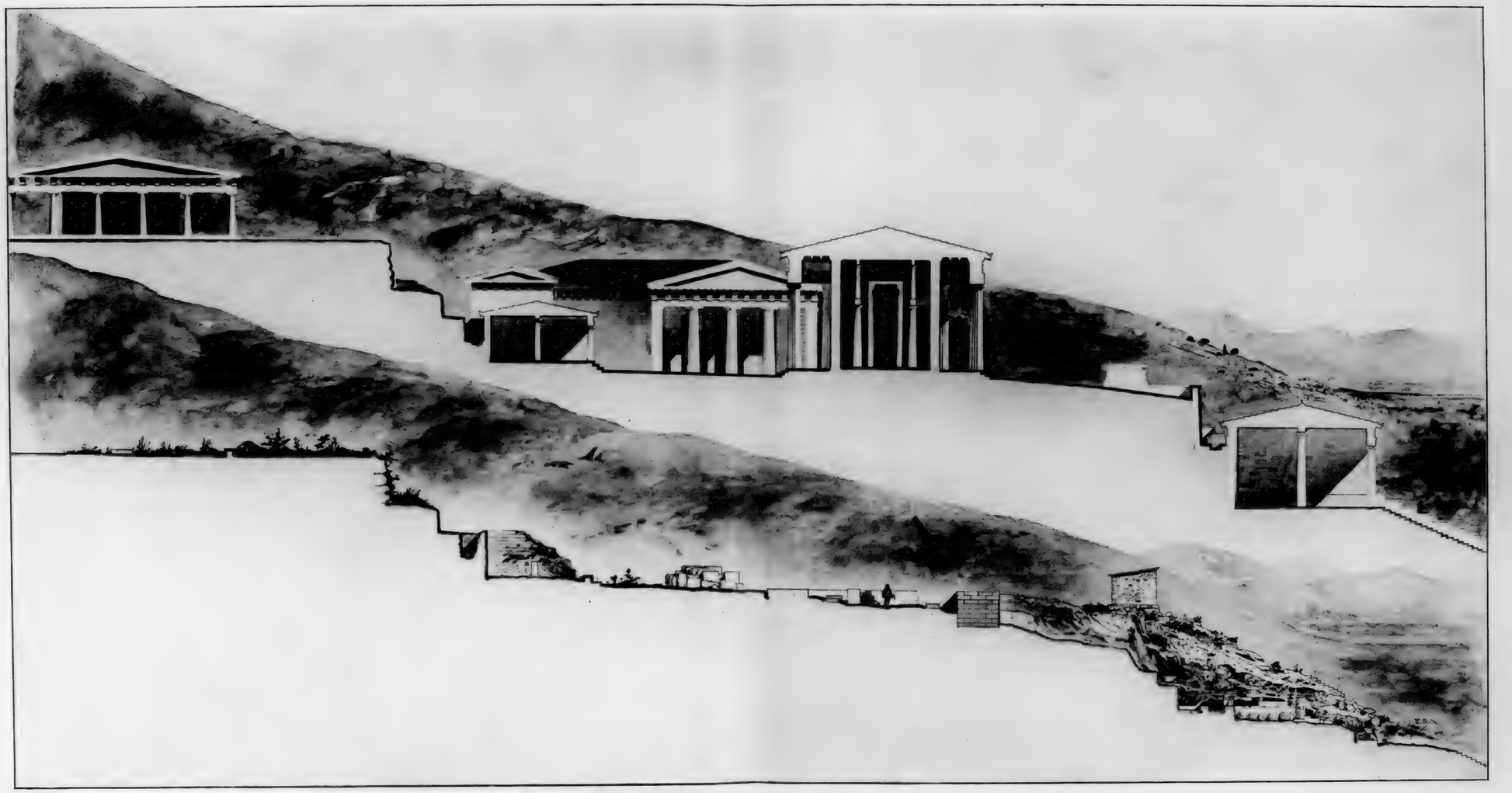
NOTE. — The flatness of the plain is made apparent, with its tilled fields and the villages dotted over it.



ARGIVE HERAEUM. — VIEW LOOKING SOUTHWEST UPON THE REMAINS OF THE OLD TEMPLE AND ITS PLATFORM

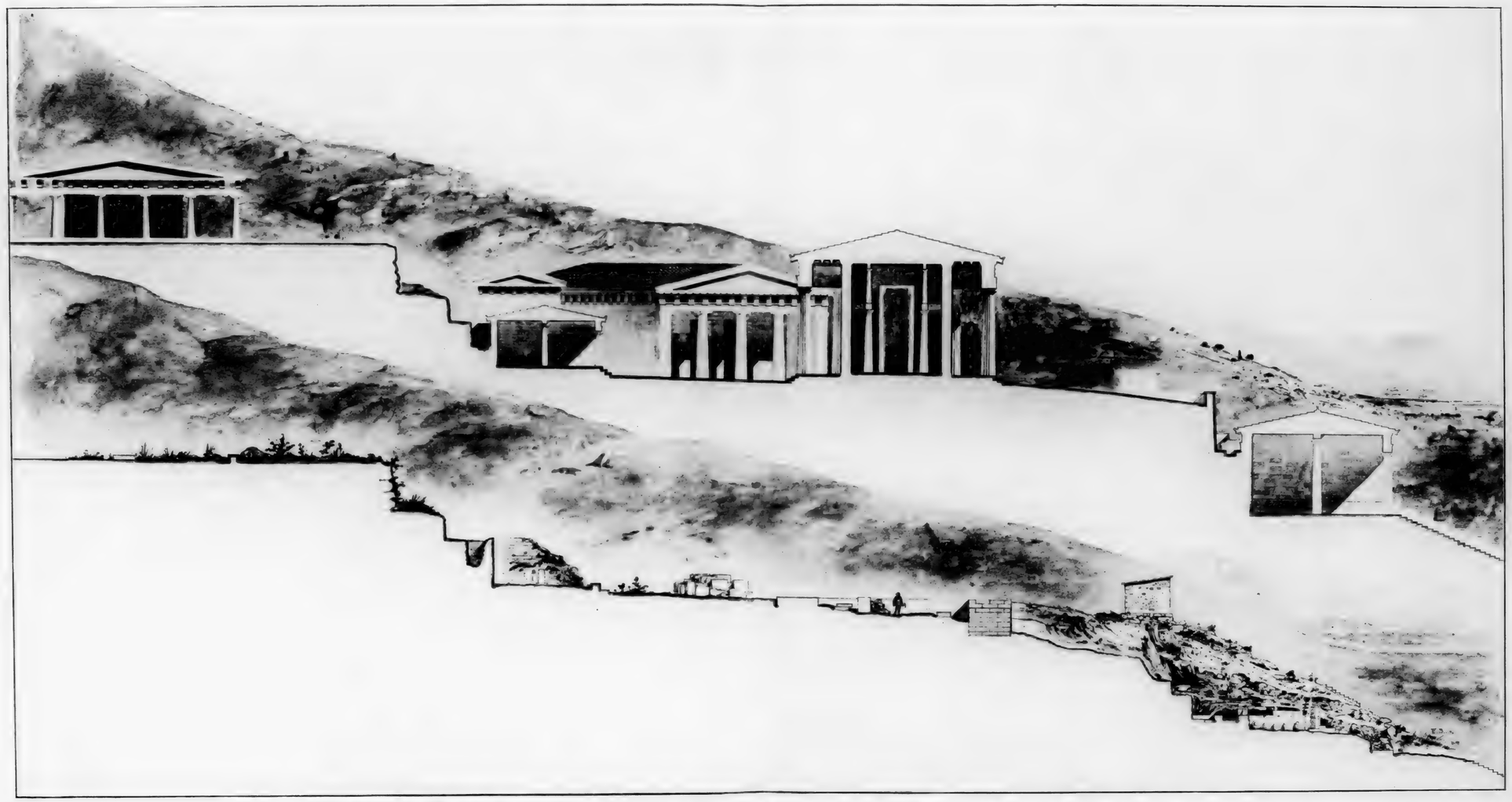
The town of Argos is at the base of the hill (Larisa) in the left distance.

NOTE. — The flatness of the plain is made apparent, with its tilled fields and the villages dotted over it.



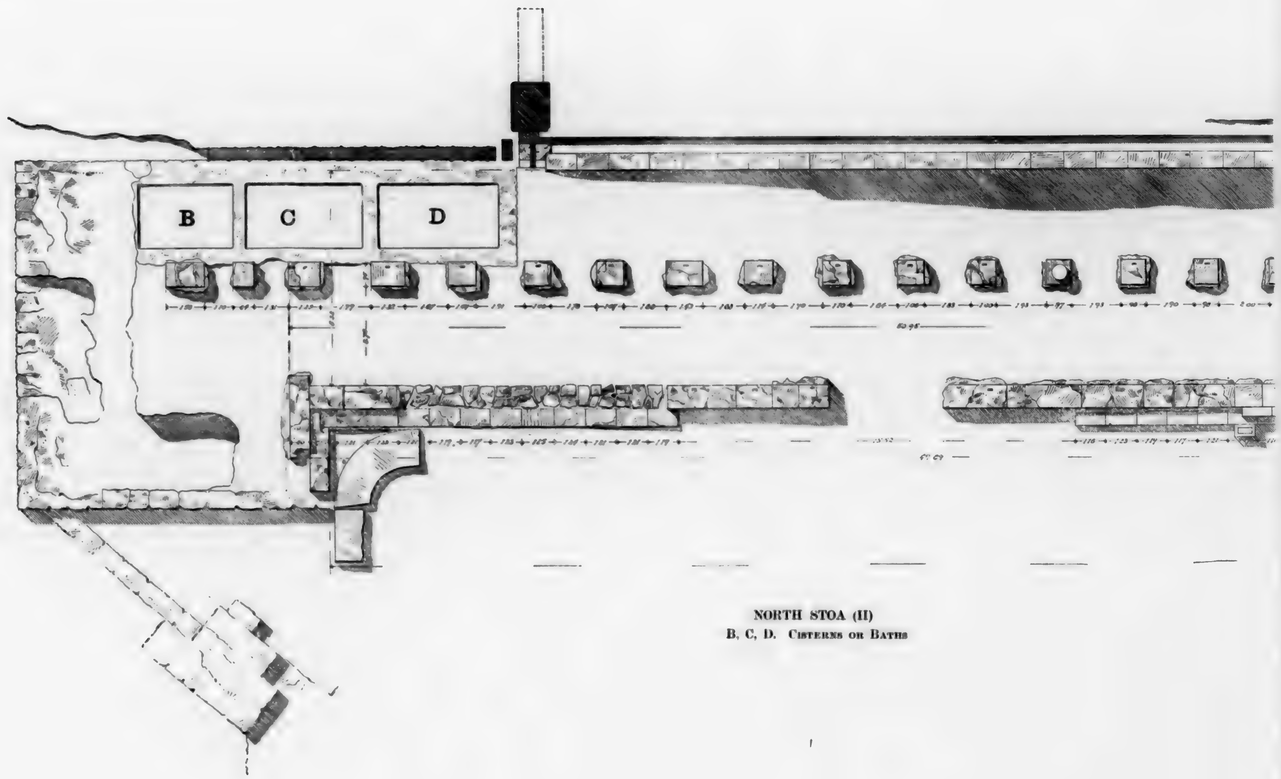
ARGIVE HERAEUM. — SECTION THROUGH SITE FROM NORTH TO SOUTH: ACTUAL STATE BELOW AND RESTORED VIEW ABOVE

Measured and Restored by Edward L. Tilton

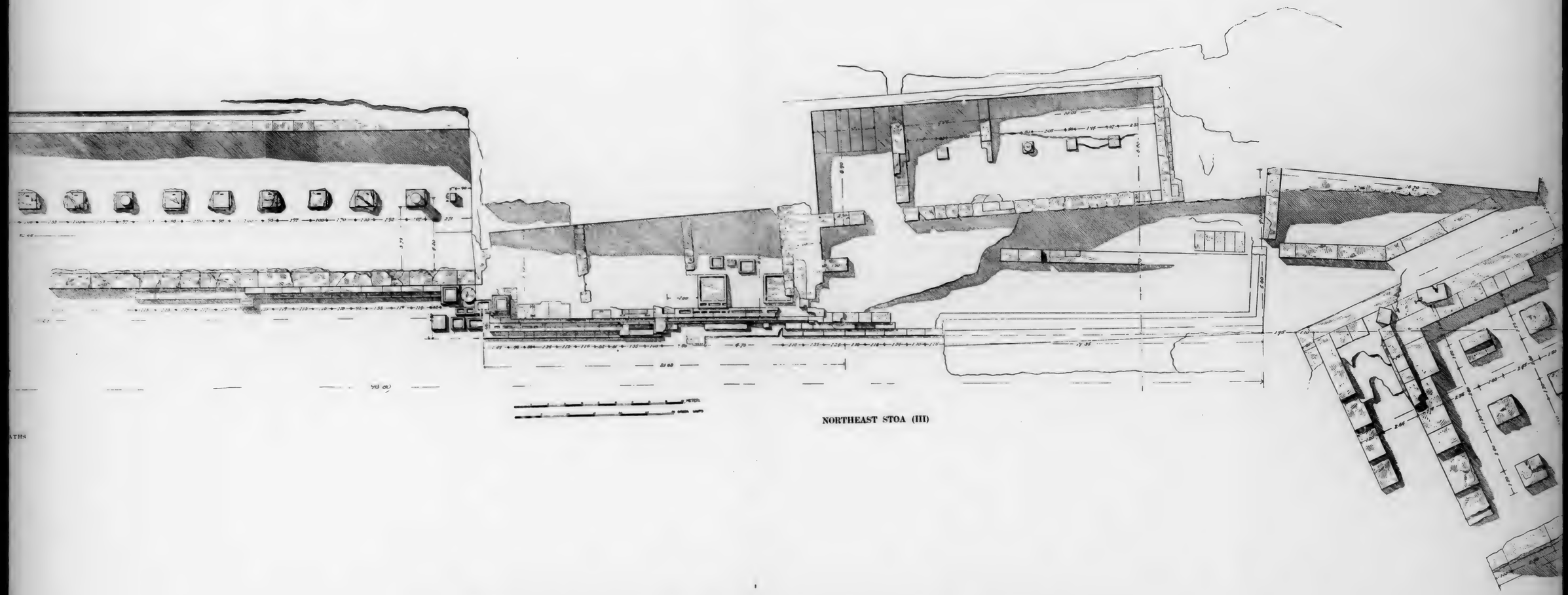


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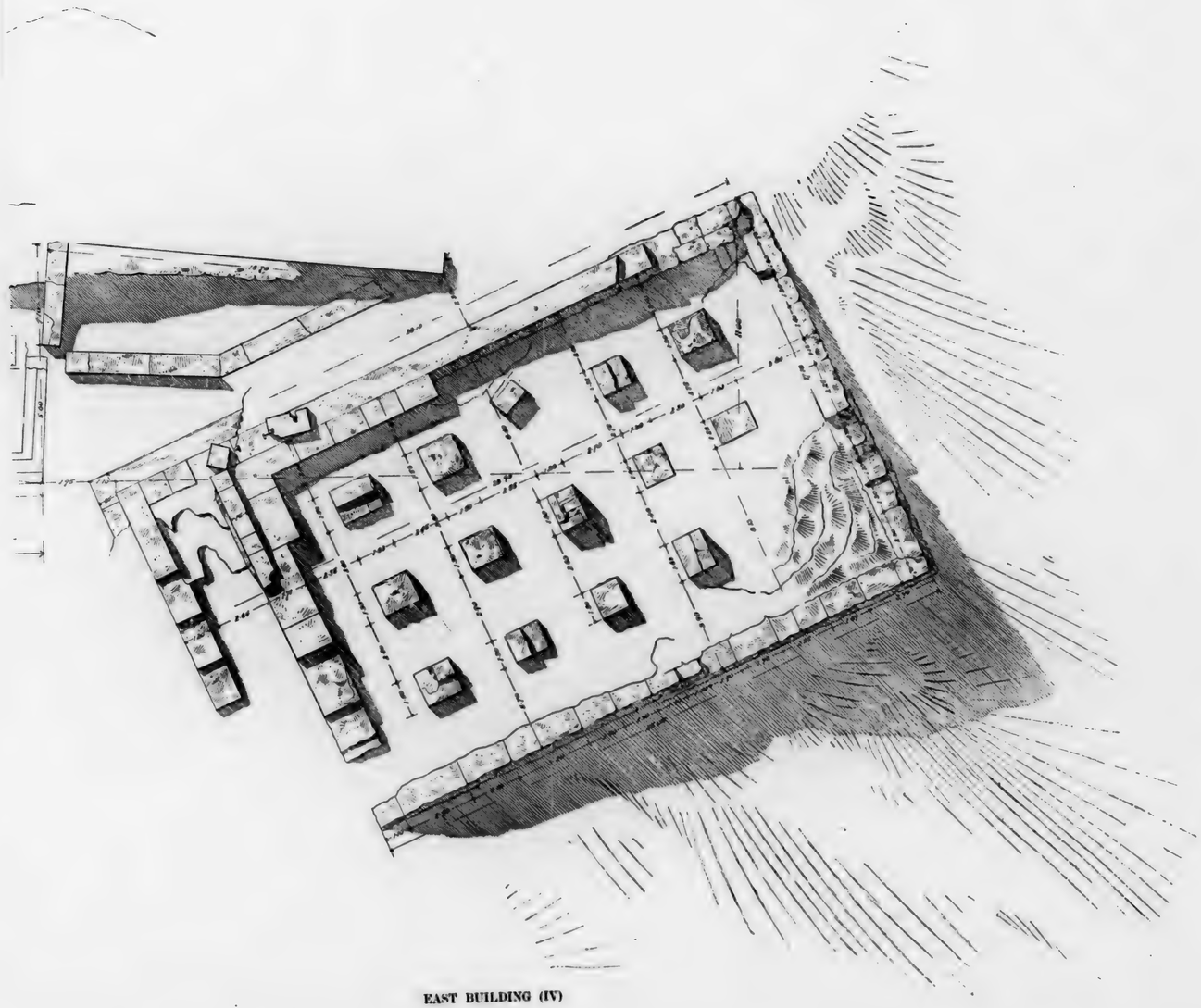
Measured and Restored by Edward L. Tilton



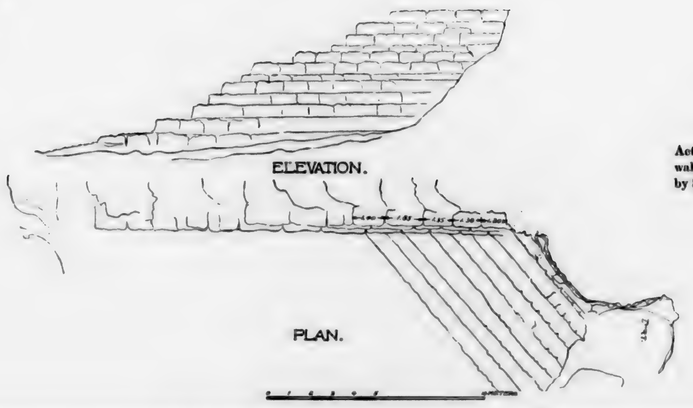
NORTH STOA (II)
B, C, D. CISTERNS OR BATHS



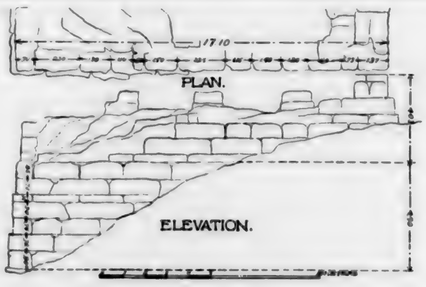
ARGIVE HERAEUM. — PLAN OF NORTH STOA, NORTHEAST STOA, AND EAST BUILDING: PRESENT STATE



EAST BUILDING (IV)



A.
Actual state of retaining wall at east end of steps by South Stoa.

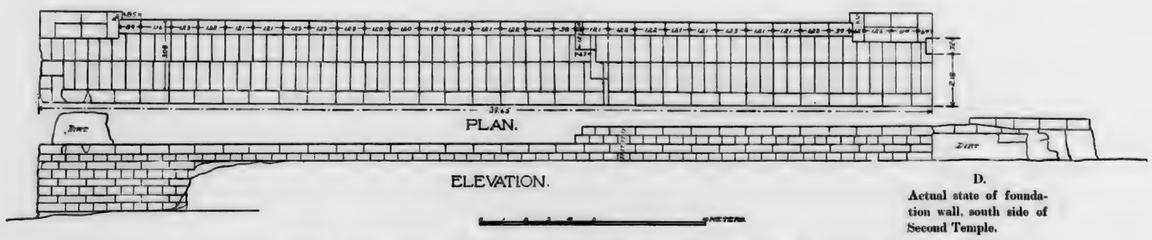


B.
Actual state of retaining wall at east end of East Building.





C.
Actual state of retaining wall at south side of West Building.



D.
Actual state of foundation wall, south side of Second Temple.

ARGIVE HERAEUM. — PLANS AND ELEVATIONS OF VARIOUS WALLS



ARGIVE HERAEUM. — VIEW LOOKING SOUTHWEST UPON THE SECOND TEMPLE (V) FROM THE CYCLOPEAN WALL

The foreground shows statue-bases and cuts for stelae. The railway from Nauplia and Argos to Corinth skirts the base of the hills in the distance.



ARGIVE HERAEUM. — VIEW LOOKING SOUTHWEST UPON THE SECOND TEMPLE (V) FROM THE CYCLOPEAN WALL
The foreground shows statue-bases and cuts for stelae. The railway from Nauplia and Argos to Corinth skirts the base of the hills in the distance.



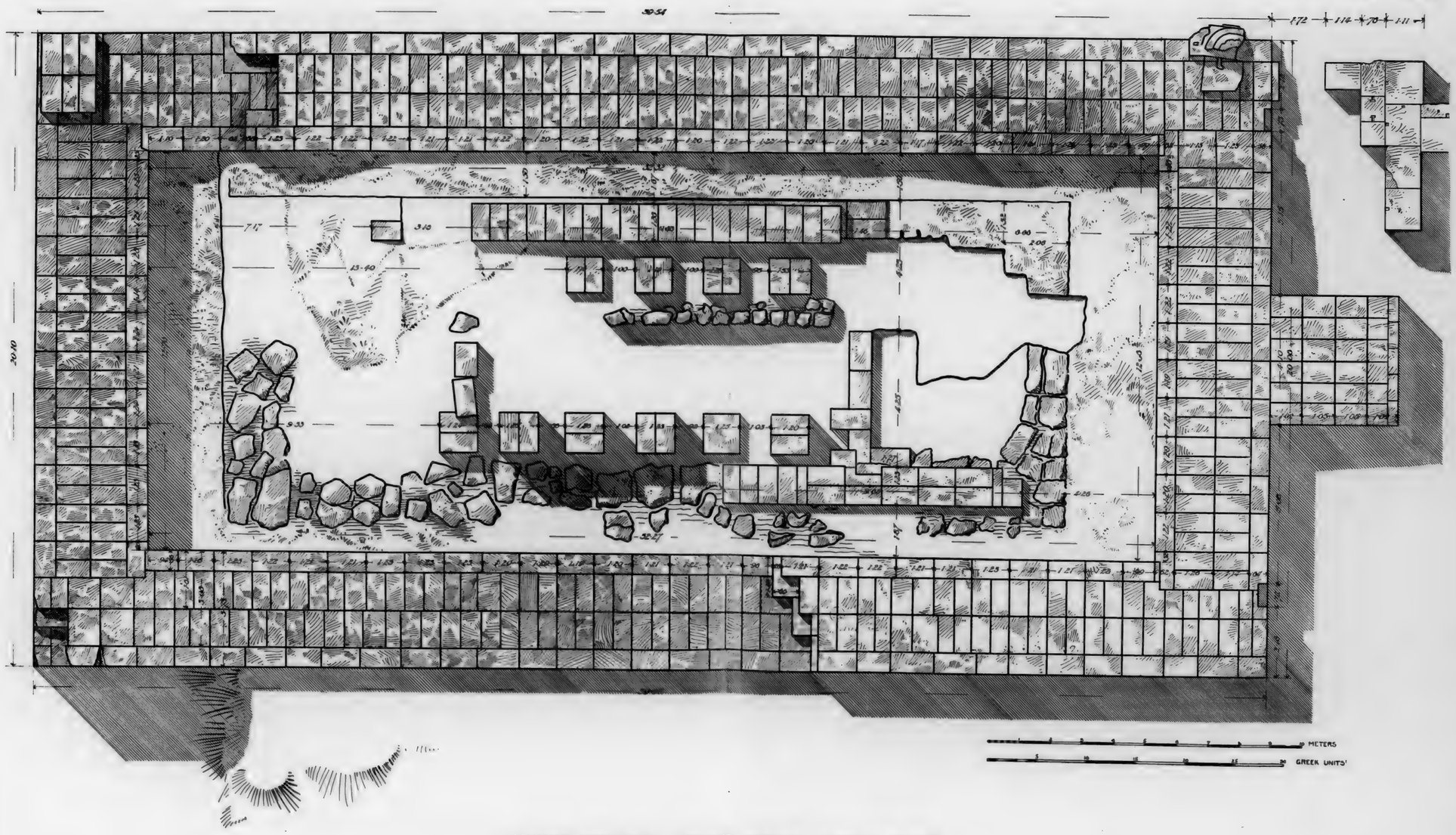
ARGIVE HERAEUM. — VIEW LOOKING SOUTHEAST UPON THE WEST BUILDING (VII)

The wall to the left is the western retaining wall of the temple terrace. On the horizon to the right is the Gulf of Argos, eight miles distant; and the long low hill rising from the gulf is Palamidi Hill, at the base of which is Nauplia. Tiryns is further to the left, but not apparent in the view. The village of Chonica is visible at about the middle of the plain.



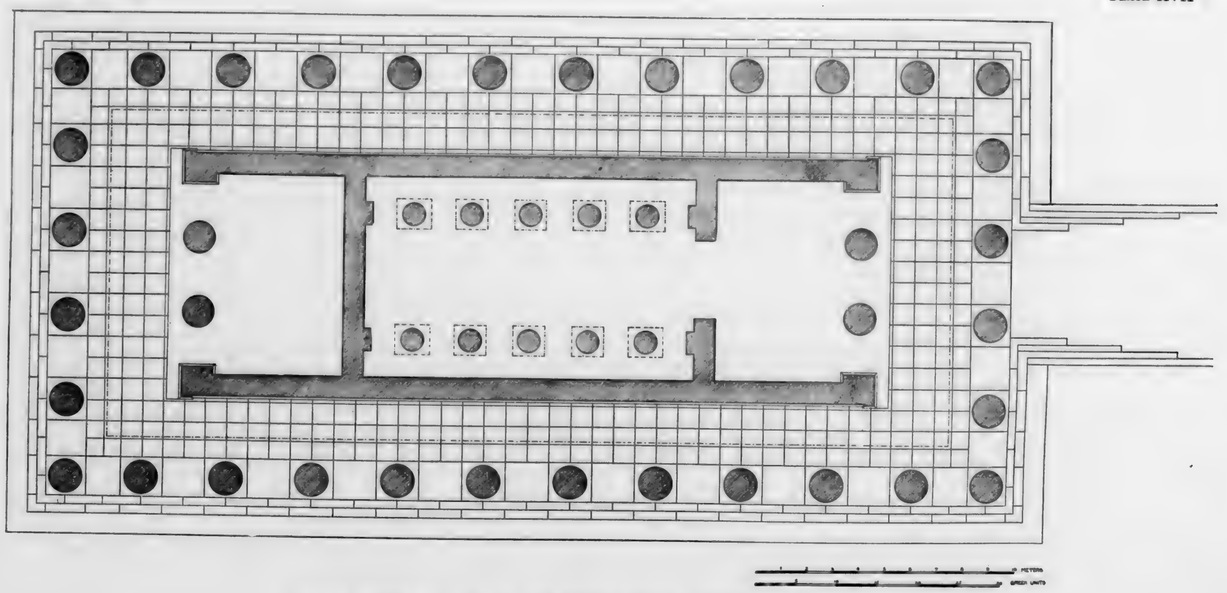
ARGIVE HERAEUM.— VIEW LOOKING SOUTHEAST UPON THE WEST BUILDING (VII)

The wall to the left is the western retaining wall of the temple terrace. On the horizon to the right is the Gulf of Argos, eight miles distant; and the long low hill rising from the gulf is Palamidi Hill, at the base of which is Nauplia. Tiryns is further to the left, but not apparent in the view. The village of Chonica is visible at about the middle of the plain.



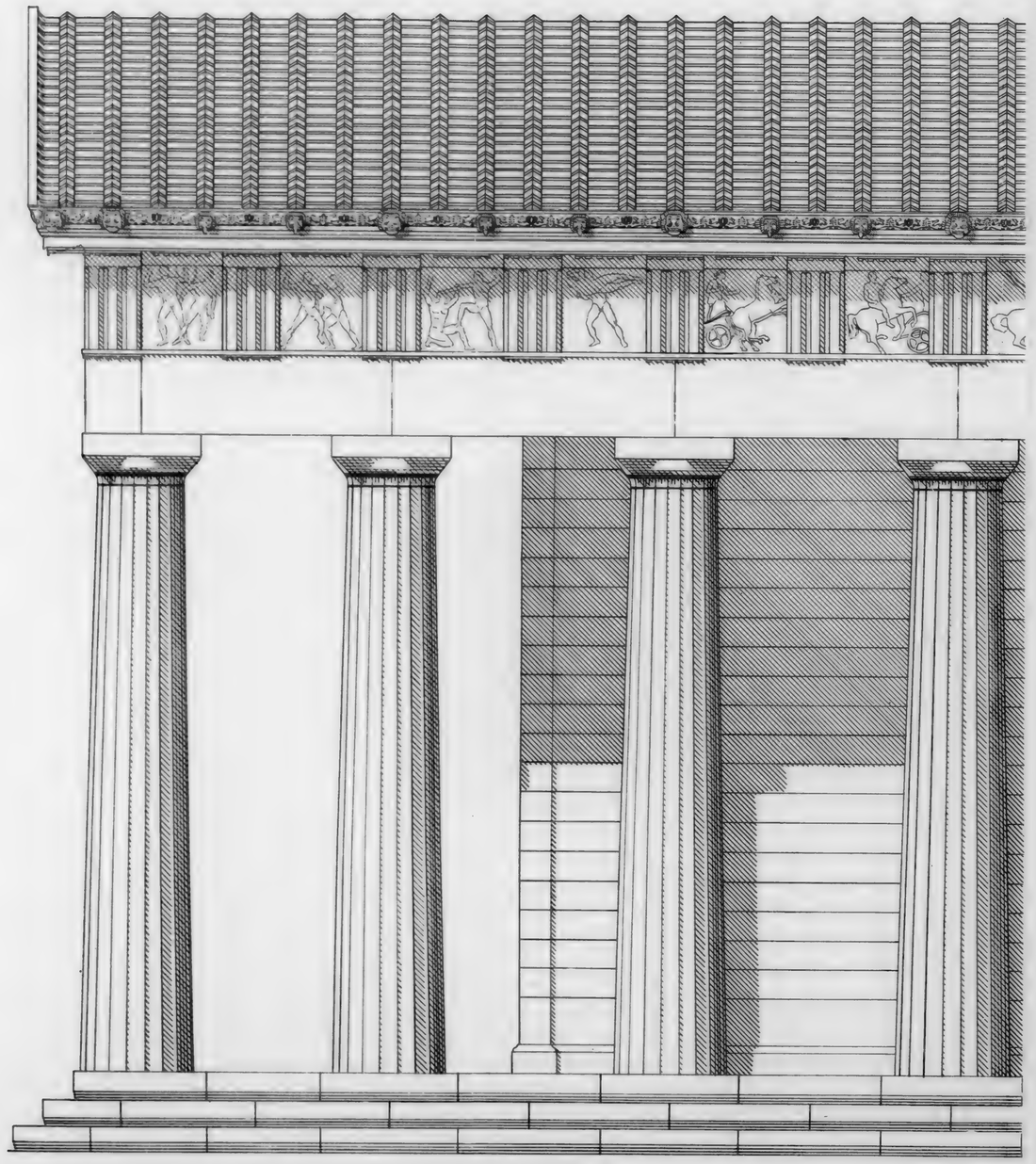
ARGIVE HERAEUM. — SECOND TEMPLE: ACTUAL STATE

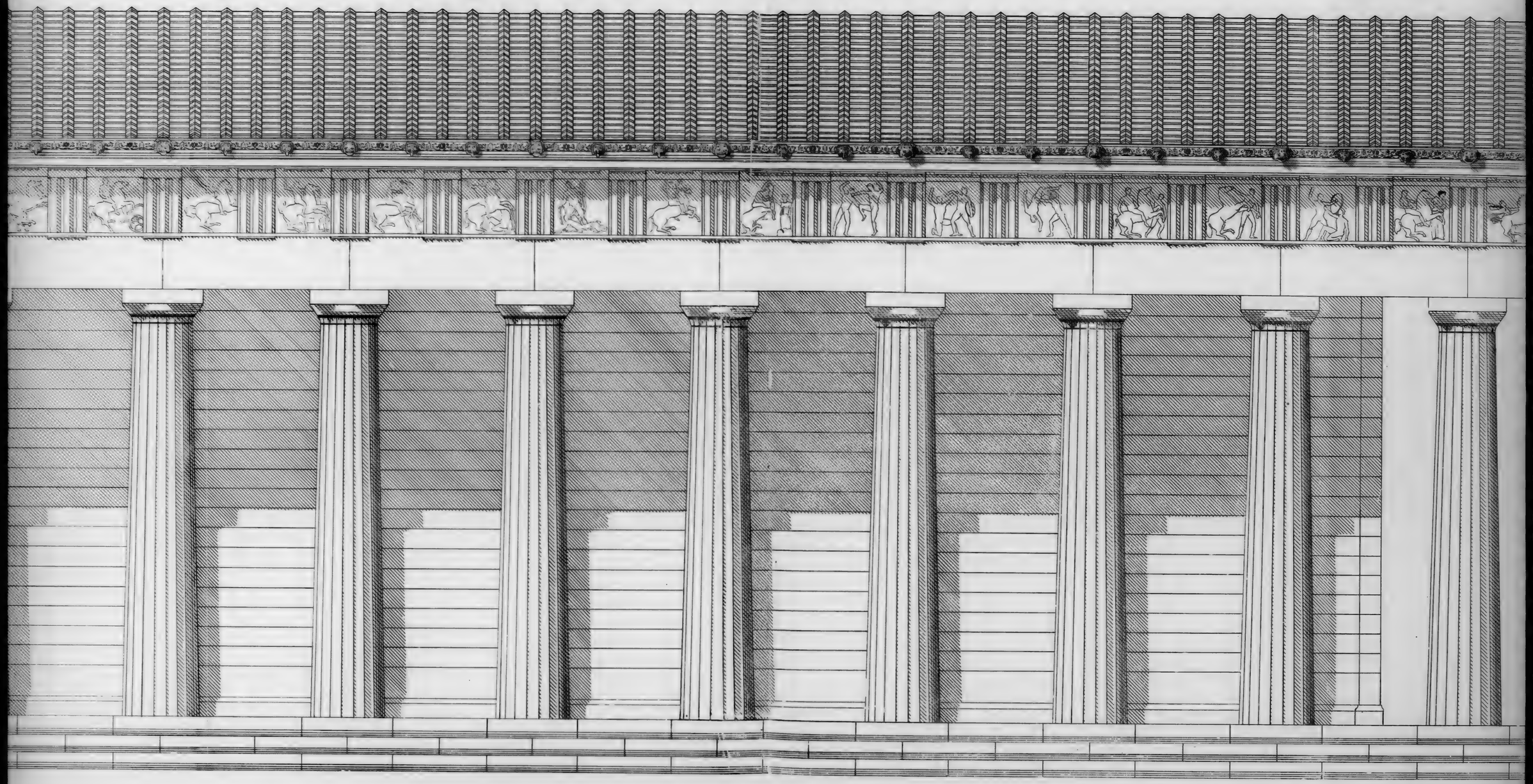
Measured by Edward L. Tilton



ARGIVE HERAEUM. — PLAN OF THE SECOND TEMPLE: RESTORATION

Restored by Edward L. Tilton

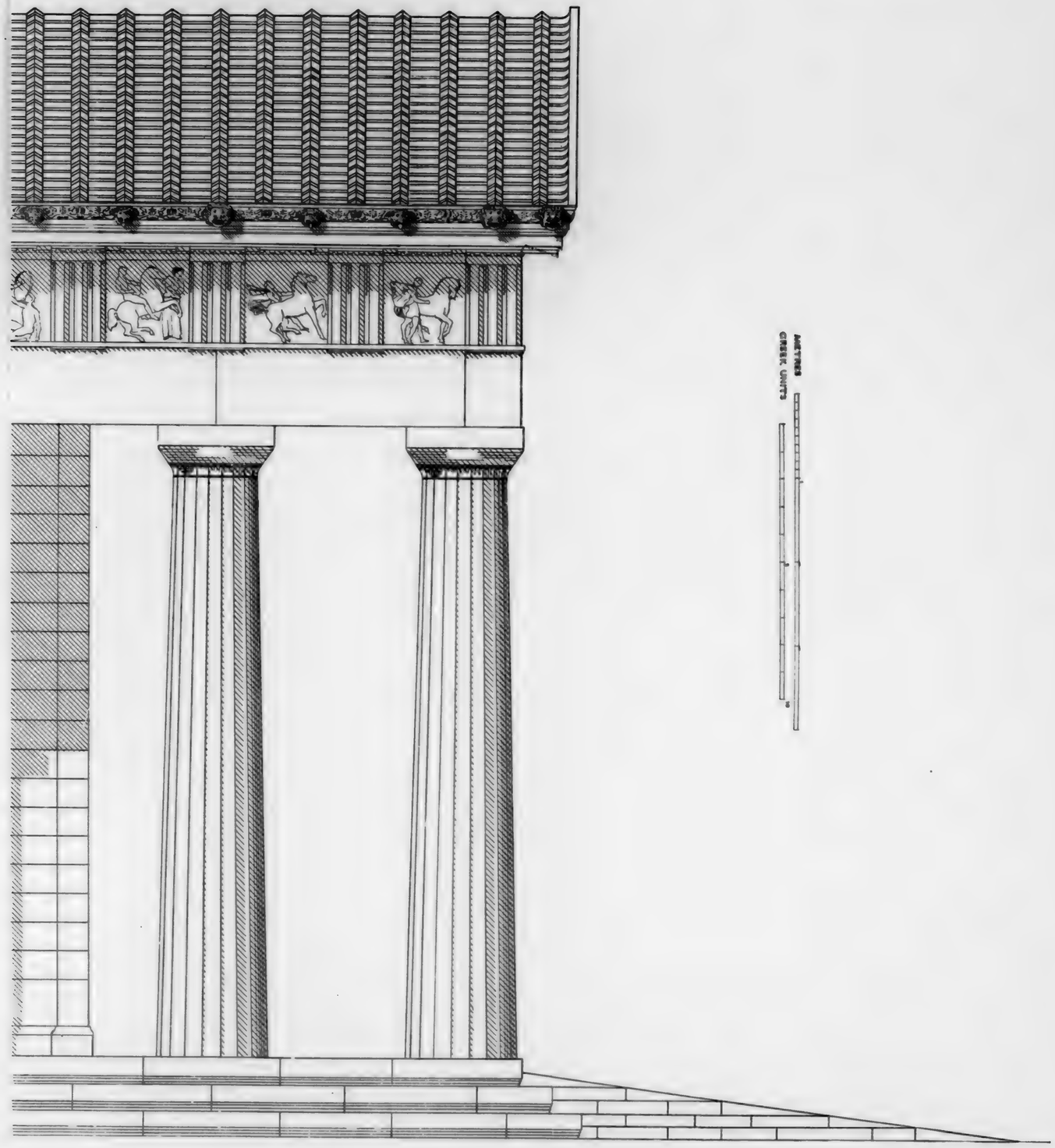


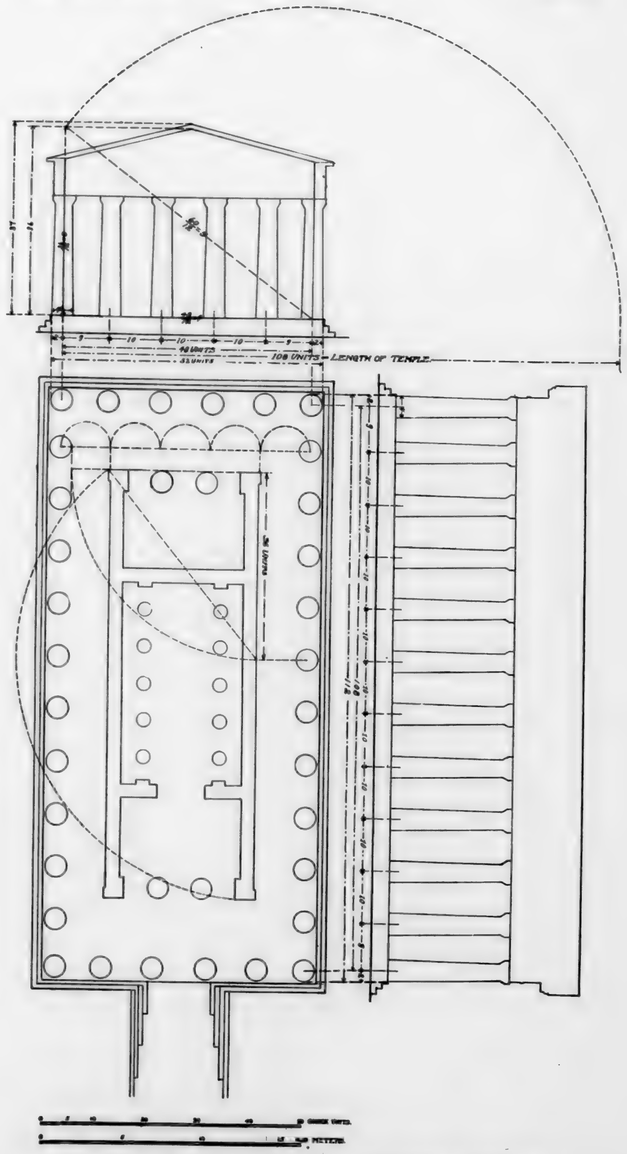


Restored by Edward L. Tilton

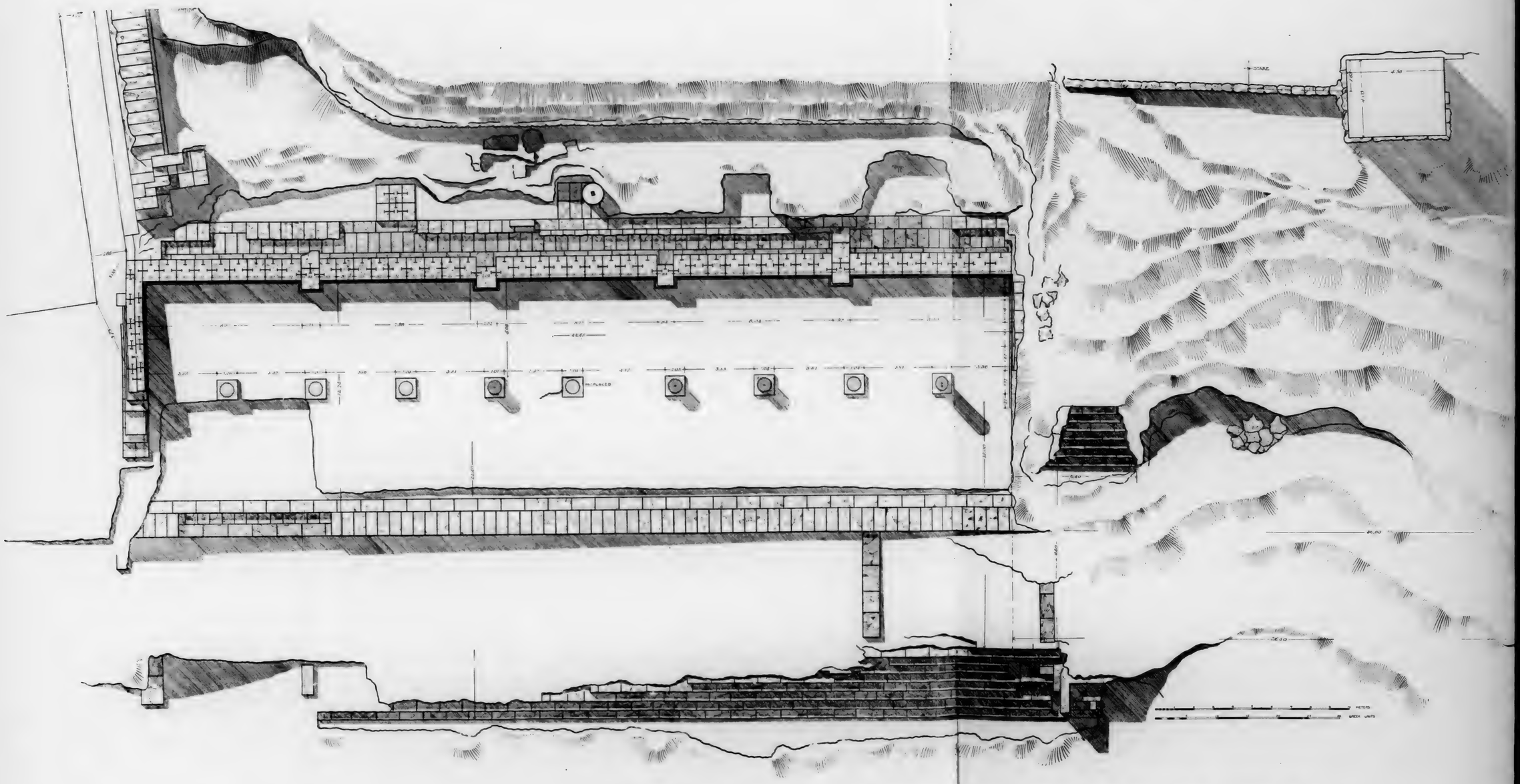
ARGIVE HERAEUM. — SIDE ELEVATION OF THE SECOND TEMPLE: RESTORED

NOTES. — The roof-tiles, metopes, and cyma-moulding are of white marble, the cornice, epistyle, and columns are of *poros* stone. The stylobate and steps are of limestone. The carvings sketched in the metopes are purely imaginary. Owing to the great reduction of the original drawing, the detail of the cyma-moulding is very imperfectly reproduced.


METRES
GREEK UNITS

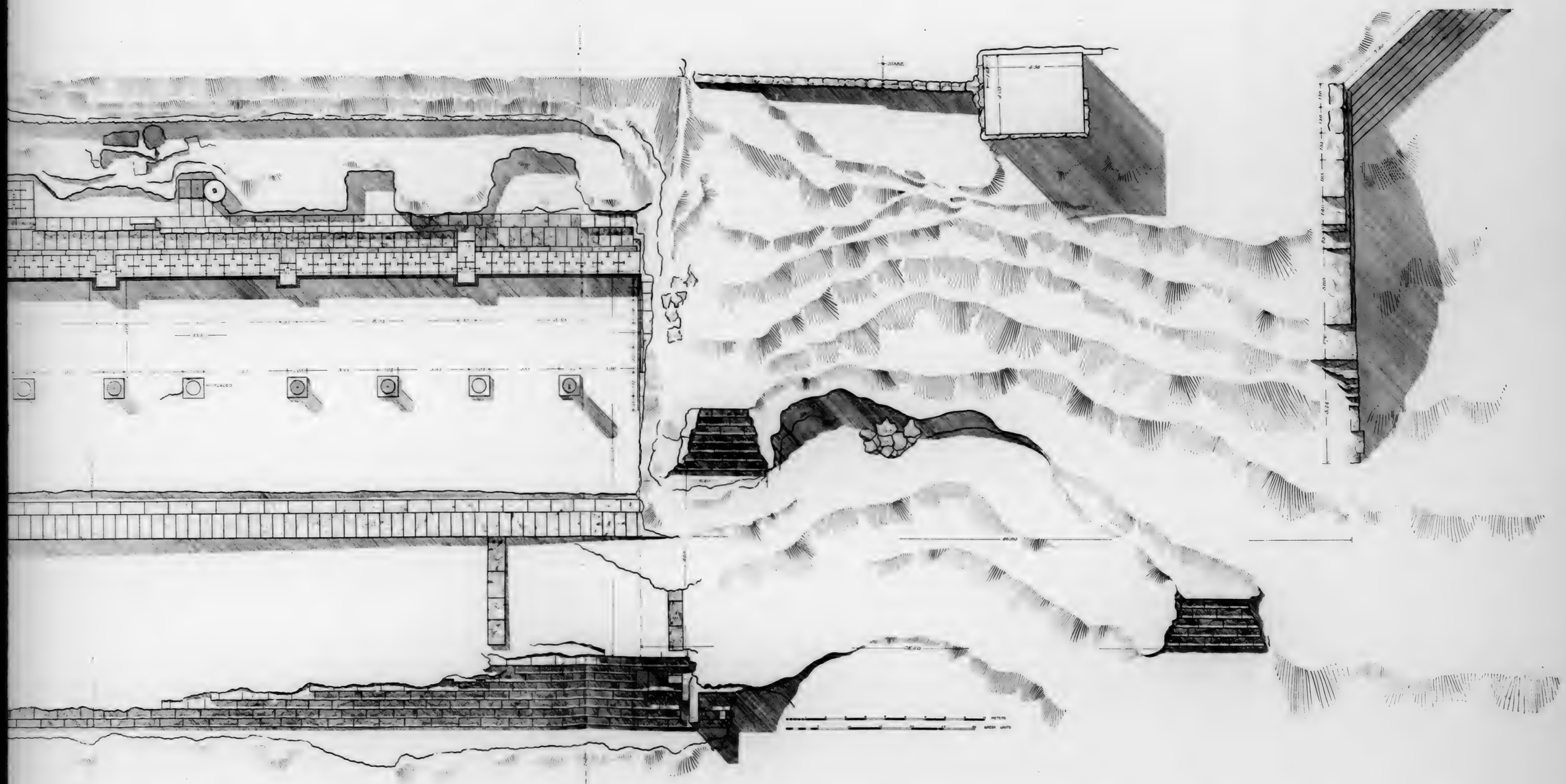


ARGIVE HERAEUM.—OUTLINE PLAN AND ELEVATIONS, SHOWING THE PROPORTIONS OF THE SECOND TEMPLE



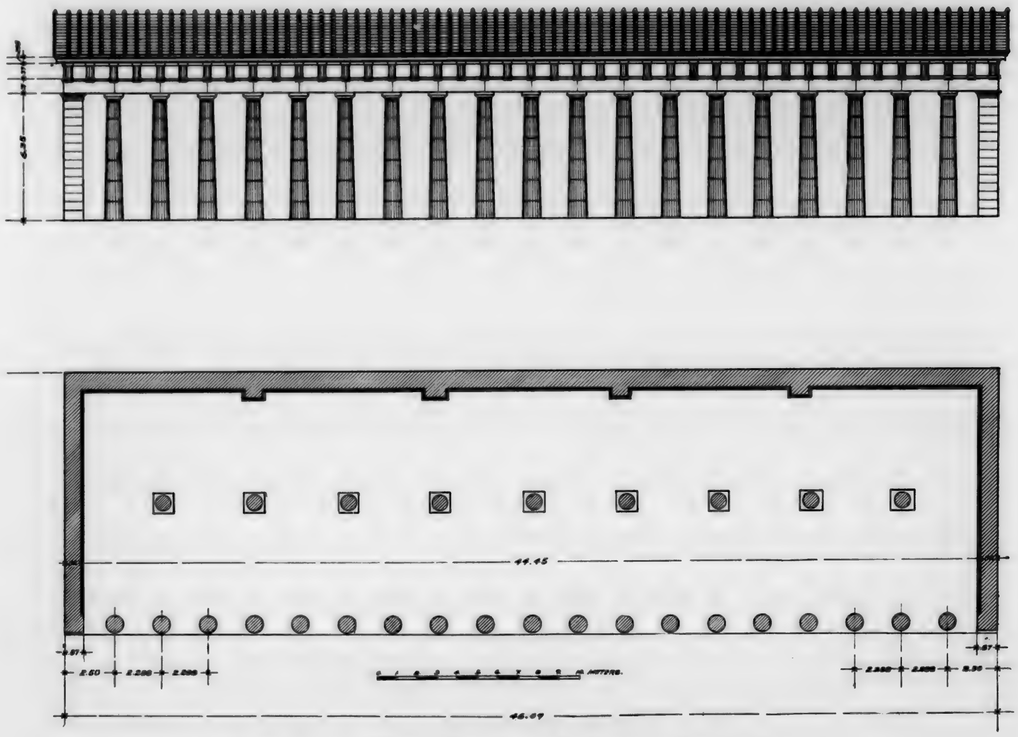
ARGIVE HERAEUM. — ACTUAL STATE OF SOUTH STOA (VI) AND OF STEPS LEADING TO UPPER LEVEL

Measured by Edward L. Tilton

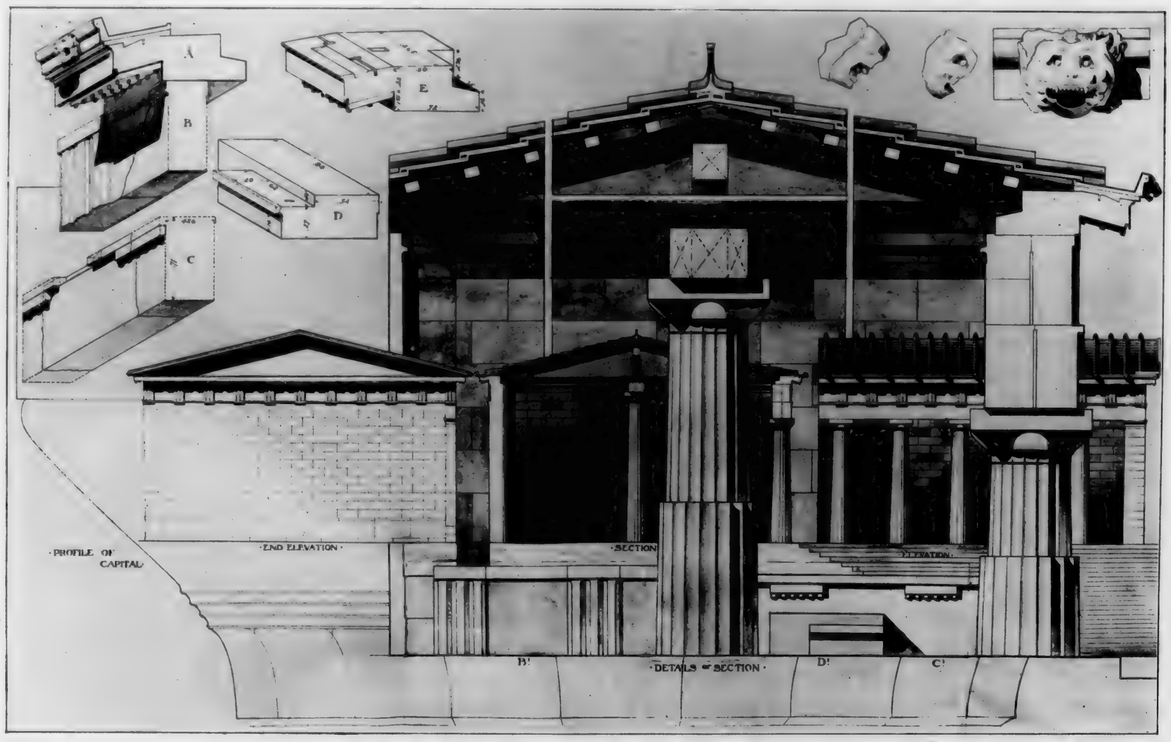


ARGIVE HERAEUM. — ACTUAL STATE OF SOUTH STOA (VI) AND OF STEPS LEADING TO UPPER LEVEL

Measured by Edward L. Tilton



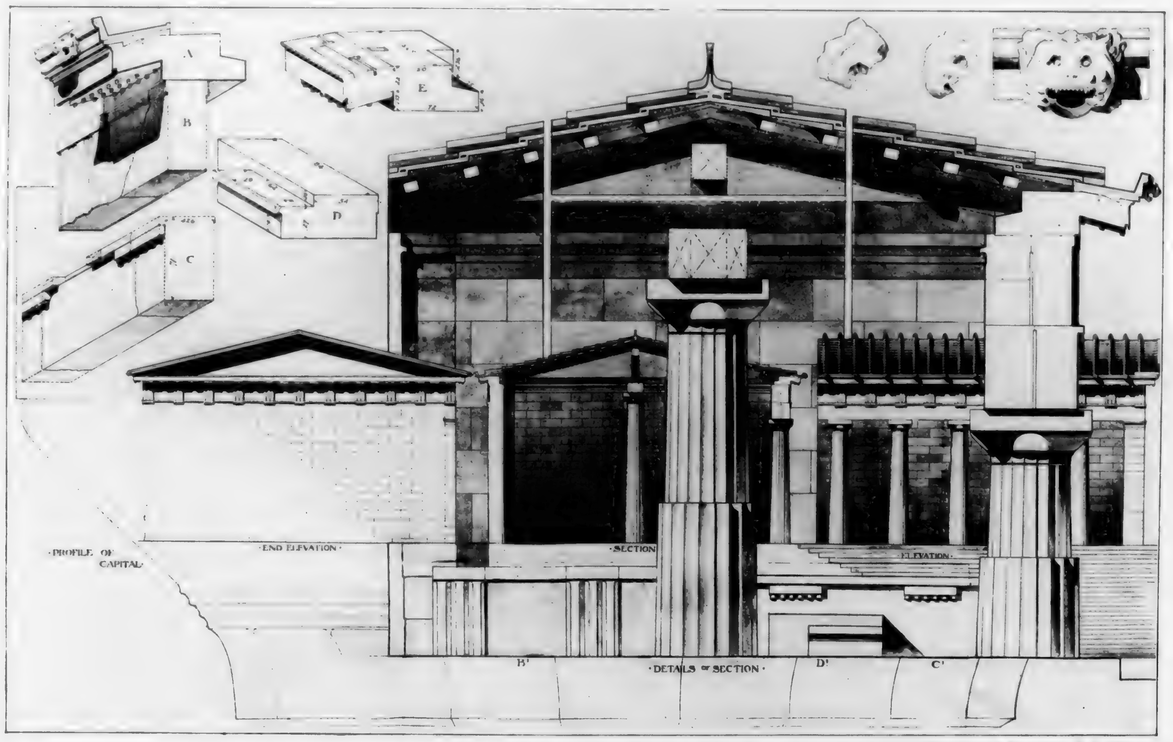
ARGIVE HERAEUM.—SOUTH STOA: PLAN AND ELEVATION RESTORED



Measured and Restored by E. L. Tilton.

ARGIVE HERAEUM. — DETAILS OF THE SOUTH STOA (RESTORED)

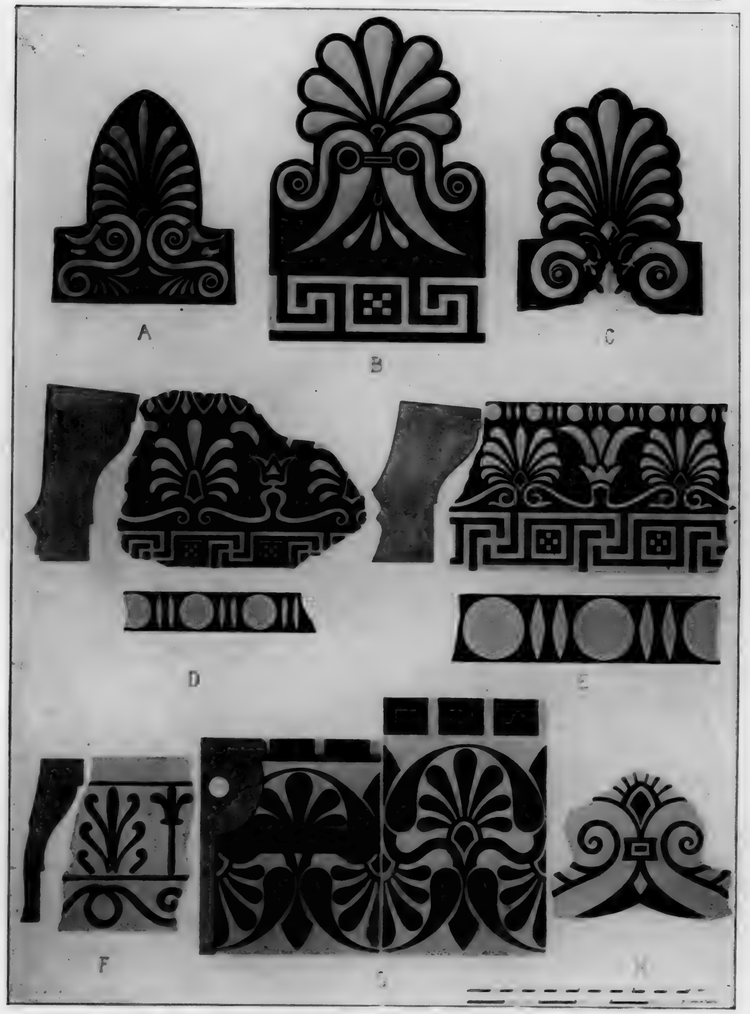
Elevation of end, and a portion of front elevation; transverse section, and the same enlarged; profile of capital. — Entablature stones in isometric perspective: — A. *Geison* or cornice. B. Frieze. B'. Frieze in elevation. C. Epistyle. C'. The same in elevation. D. Beak-moulded block. D'. The same in elevation. E. An upper view of A. — In the upper right-hand corner is the terra-cotta lion's head, restored, with two views of the fragment (side and front).



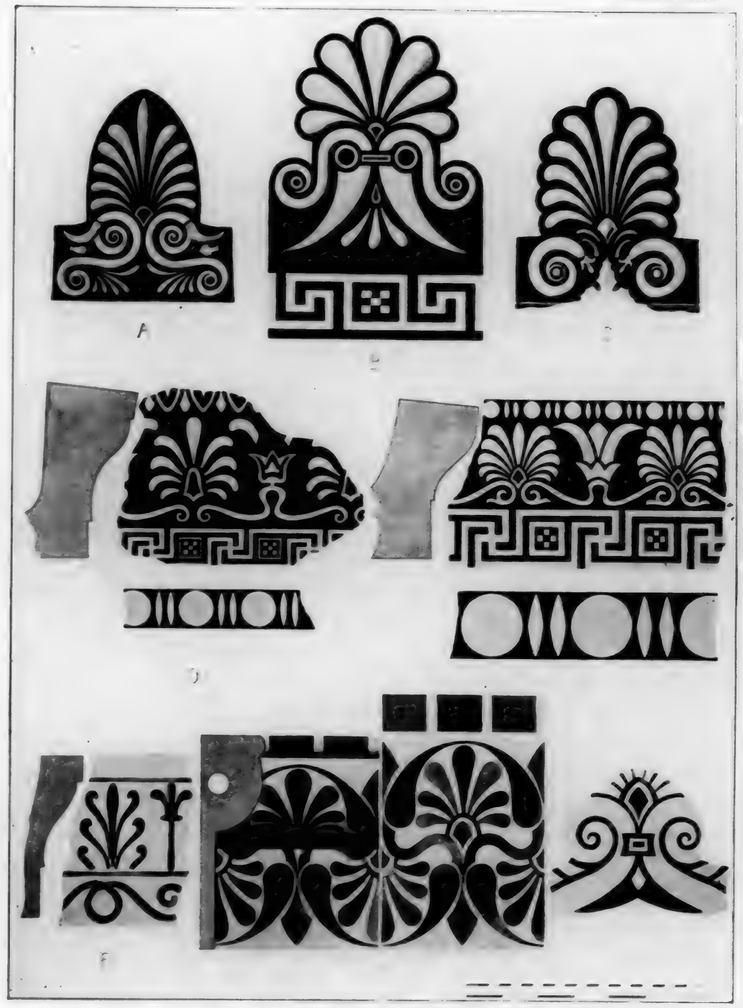
Measured and Restored by E. L. Tilton.

ARGIVE HERAEUM. — DETAILS OF THE SOUTH STOA (RESTORED)

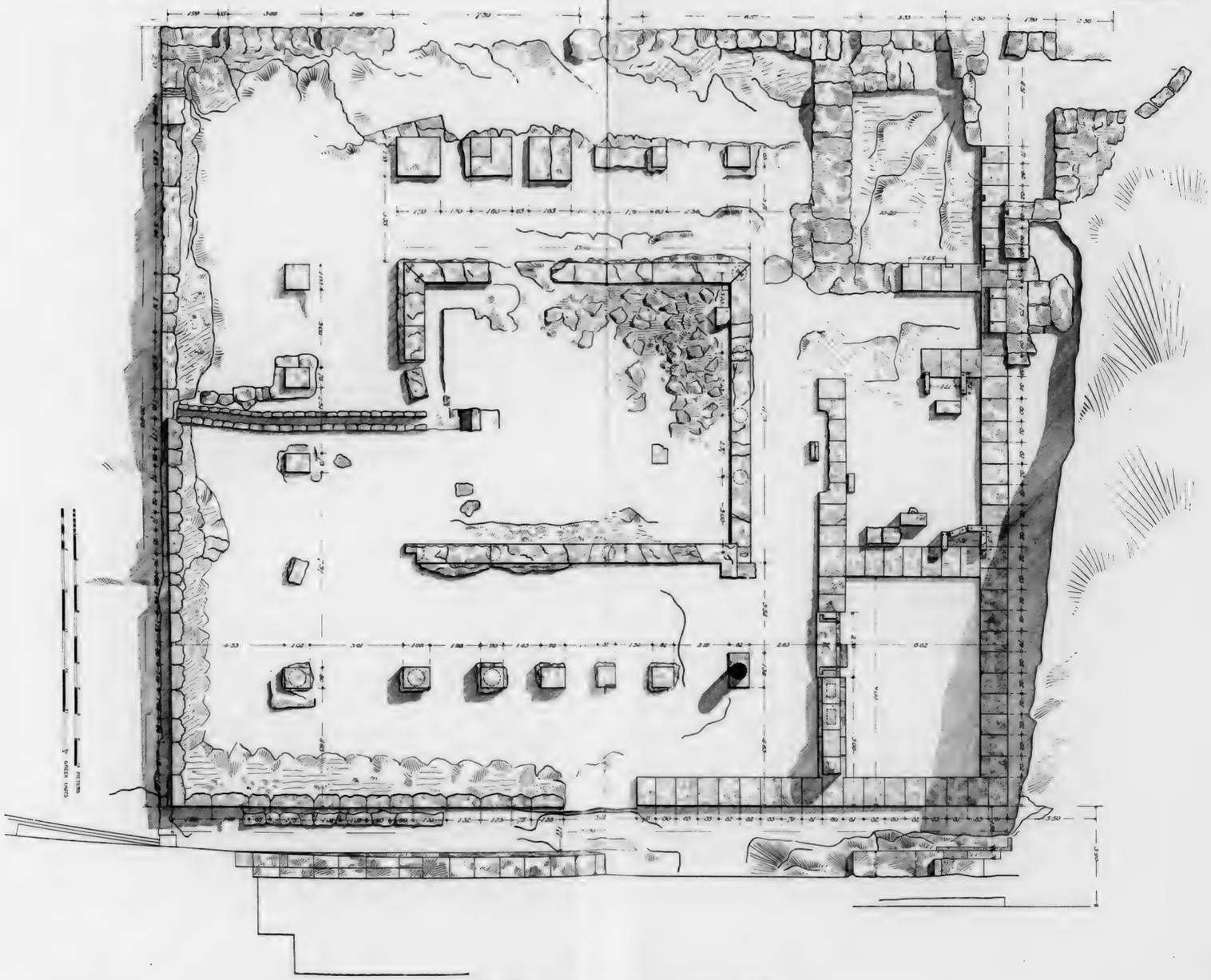
Elevation of end, and a portion of front elevation; transverse section, and the same enlarged; profile of capital. — Entablature stones in isometric perspective: — A. *Geison* or cornice. B. Frieze. B'. Frieze in elevation. C. Epistyle. C'. The same in elevation. D. Beak-moulded block. D'. The same in elevation. E. An upper view of A. — In the upper right-hand corner is the terra-cotta lion's head, restored, with two views of the fragment (side and front).



ARGIVE HERAEUM.—PAINTED TERRA-COTTA ARCHITECTURAL FRAGMENTS

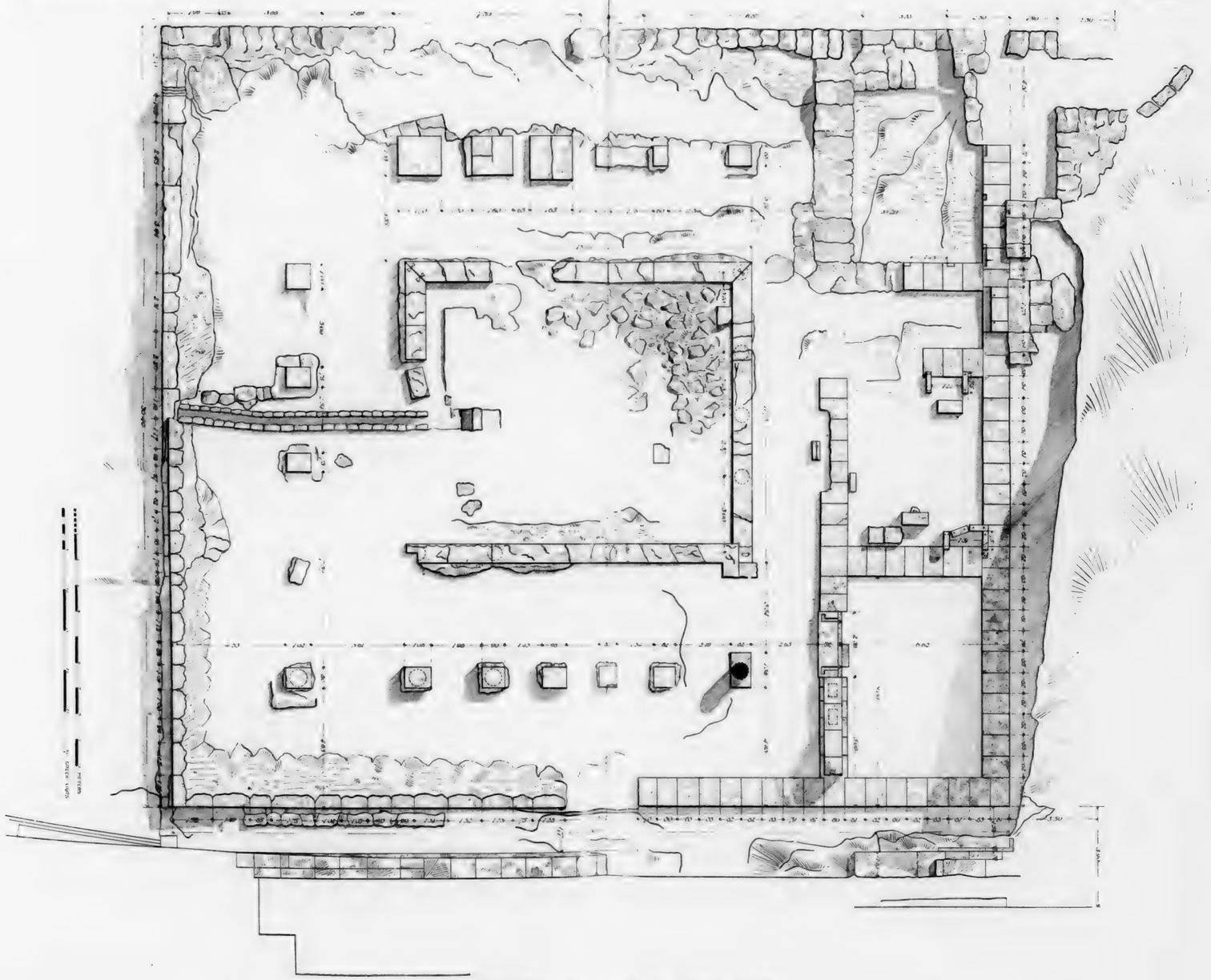


ARGIVE HERAEUM.—PAINTED TERRA-COTTA ARCHITECTURAL FRAGMENTS



ARGIVE HERAEUM. — WEST BUILDING (VII): ACTUAL STATE

Measured by Edward L. Tilton



ARGIVE HERAEUM. — WEST BUILDING (VII): ACTUAL STATE

Measured by Edward L. Tilton



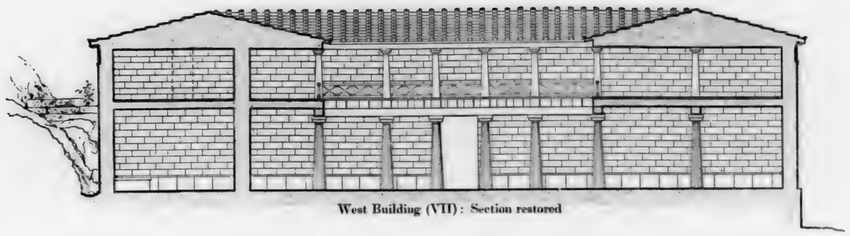
ARGIVE HERAEUM. — VIEW LOOKING SOUTHWEST UPON THE WEST BUILDING (VII)

Note the limestone door-sill near the centre foreground; the column-drum with sixteen channels, and the small capital, lying inverted beyond it, with fourteen channels.



ARGIVE HERAEUM.—VIEW LOOKING SOUTHWEST UPON THE WEST BUILDING (VII)

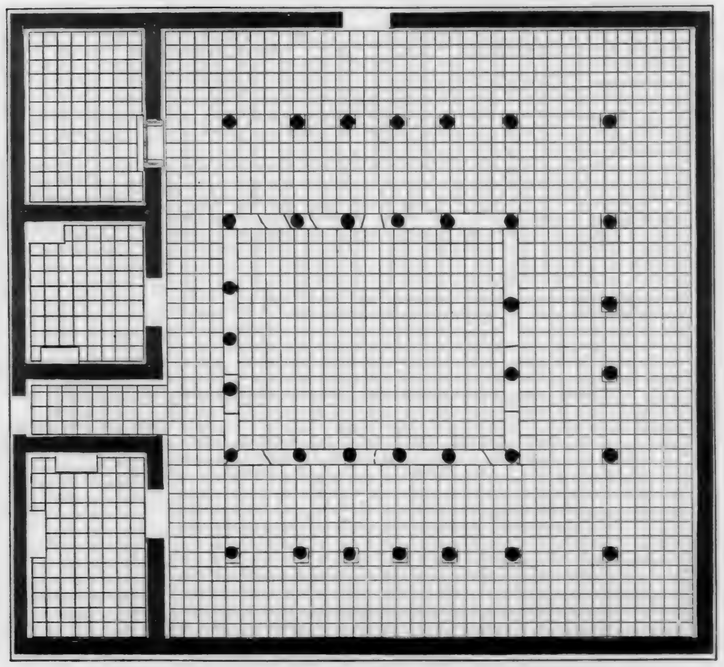
Note the limestone door-sill near the centre foreground; the column-drum with sixteen channels, and the small capital, lying inverted beyond it, with fourteen channels.



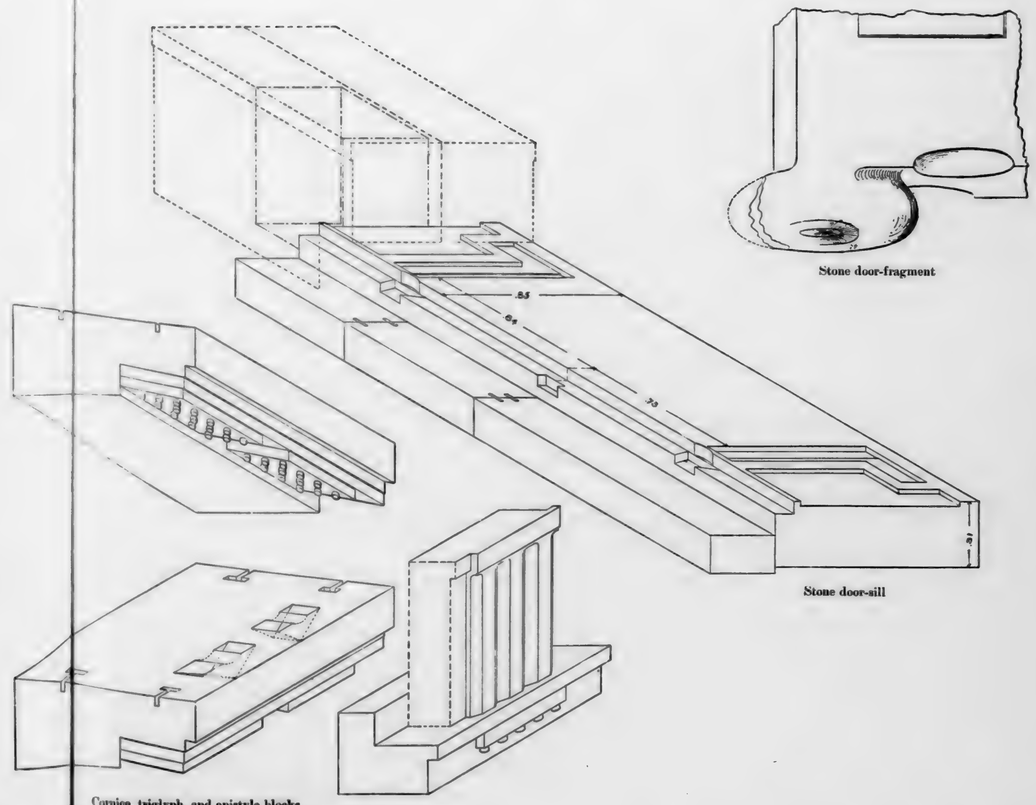
West Building (VII): Section restored



Actual state of wall retaining the west side of the Terrace of the Second Temple, and adjacent to the West Building



West Building (VII): Plan restored

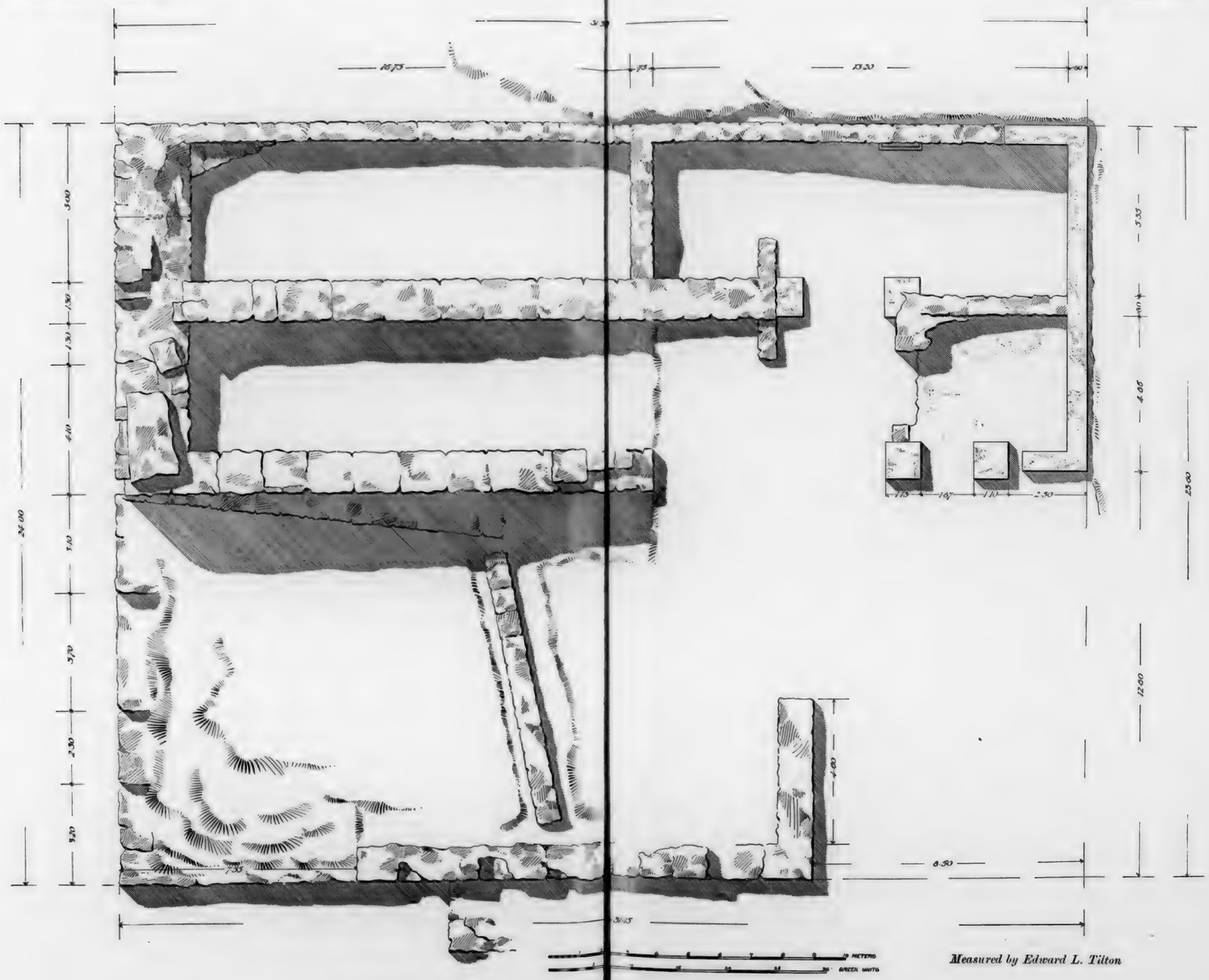


Cornice, triglyph, and epistyle blocks

Stone door-fragment

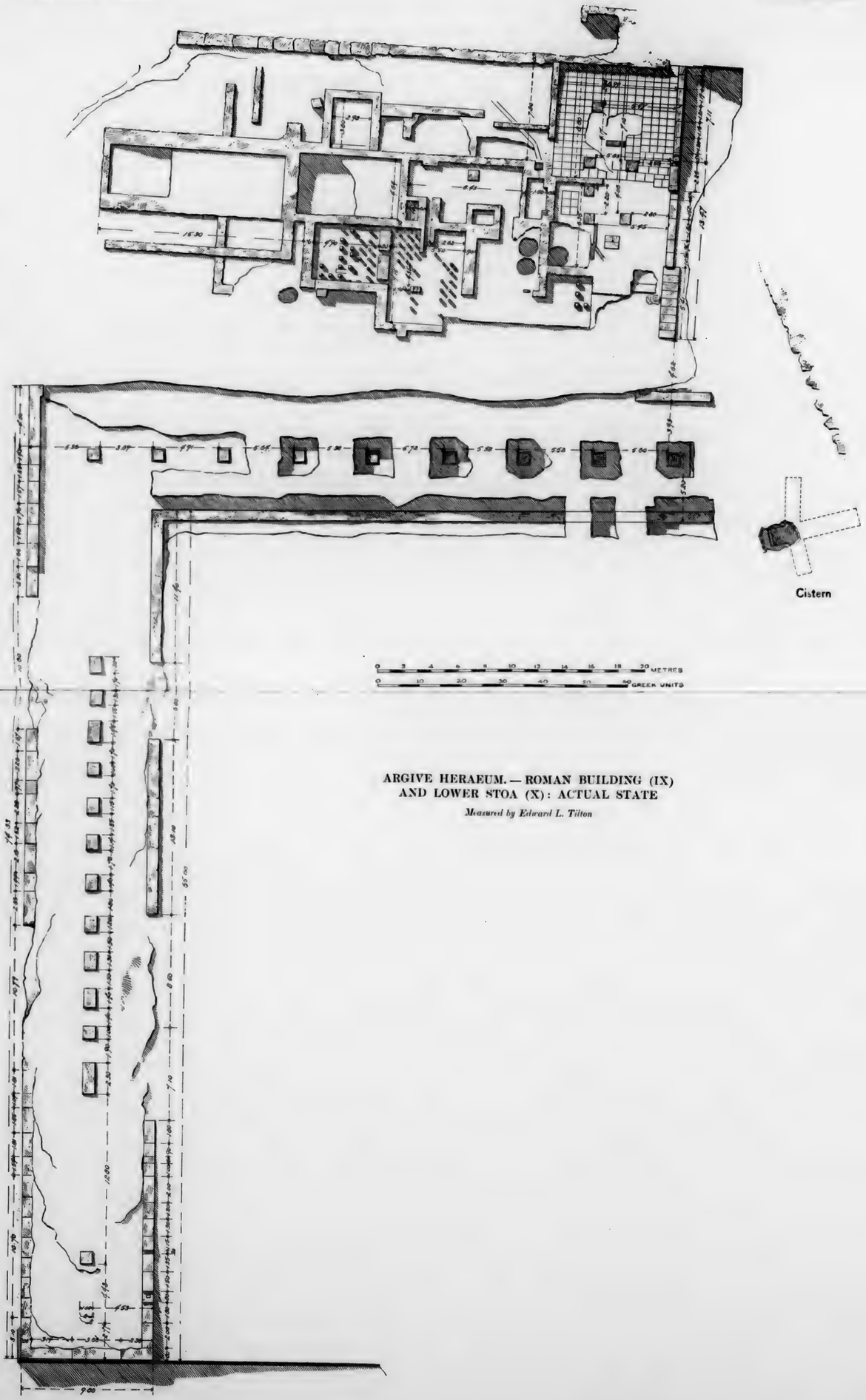
Stone door-sill

ARGIVE HERAEUM. — WEST BUILDING (VII): PLAN AND DETAILS



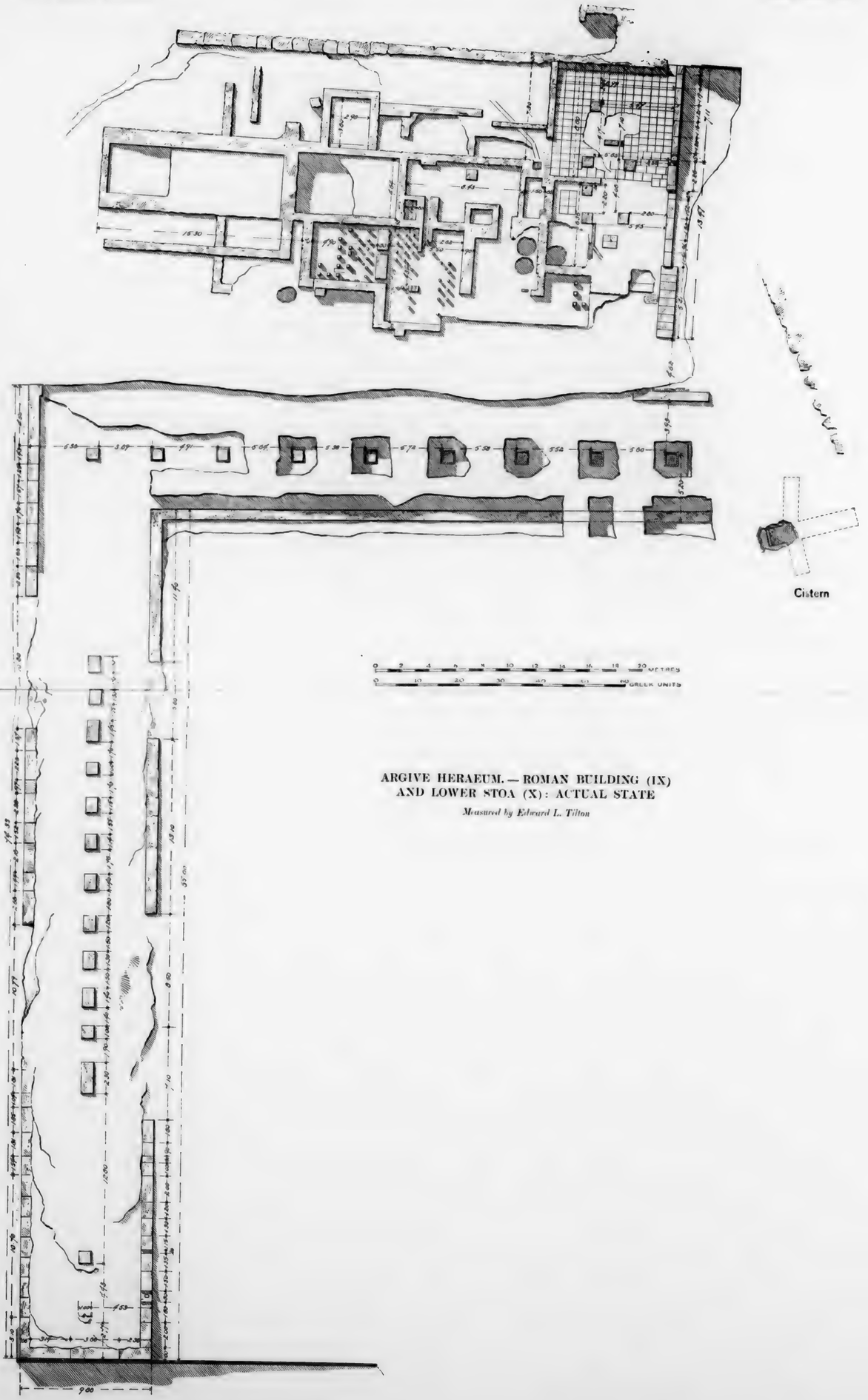
Measured by Edward L. Tilton

ARGIVE HERAEUM. — NORTHWEST BUILDING (VIII): ACTUAL STATE



ARGIVE HERAEUM. — ROMAN BUILDING (IX) AND LOWER STOA (X): ACTUAL STATE

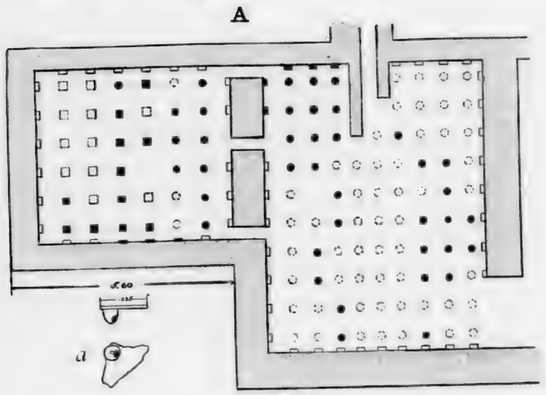
Measured by Edward L. Tilton

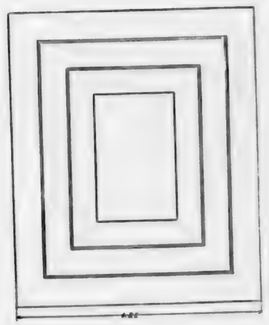


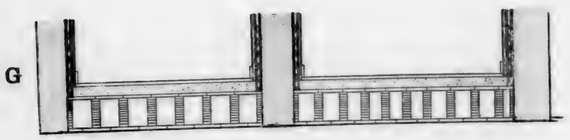
ARGIVE HERAEUM. — ROMAN BUILDING (IX) AND LOWER STOA (X): ACTUAL STATE

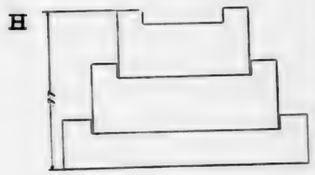
Measured by Edward L. Tilton

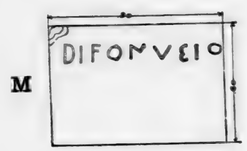
THE ARGIVE HERAEUM

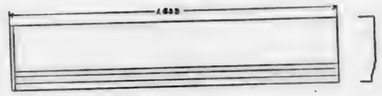


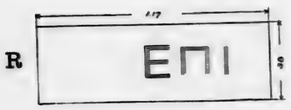






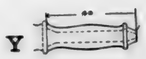


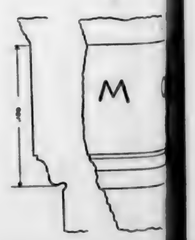




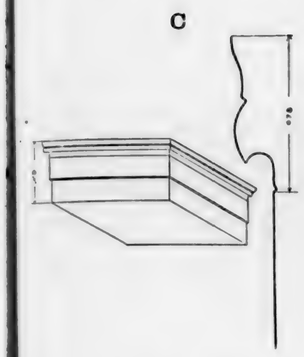


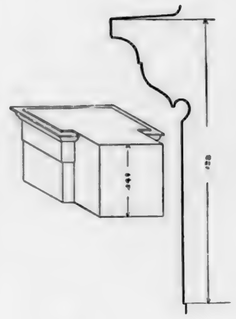


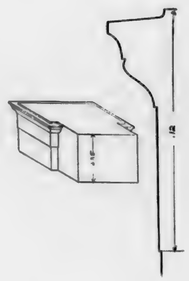


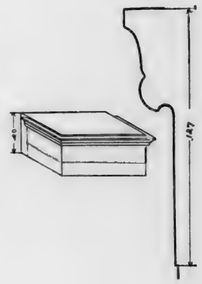


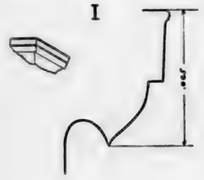
ARGIVE HERAEUM. — ROMAN BUILDING (IX): FU[illegible]ONSTRUCTION (A, G). FRAGMENTS FROM OTHER BU[illegible]GS

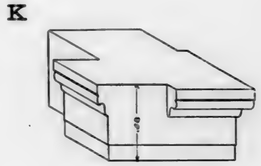


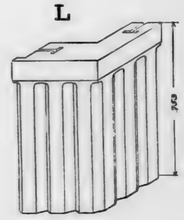


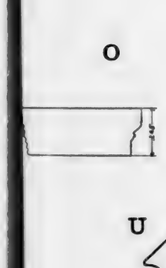


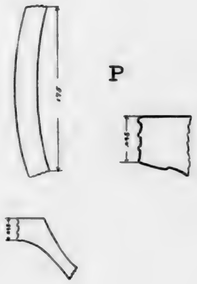


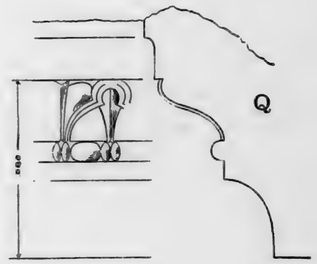


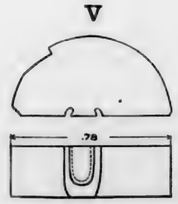


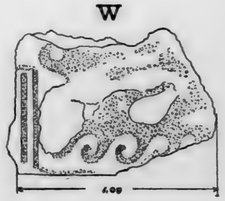












MARBLE STATUARY FROM THE HERAEUM

MARBLE STATUARY FROM THE HERAEUM

By CHARLES WALDSTEIN

Though there were numerous finds of plastic work in other materials made during the excavations on this site (notably in terra-cotta and bronze), the larger works of sculpture are almost exclusively of marble. This has been the case in most great excavations, owing mainly to the fact that statues of other materials, bronze and gold and ivory, were, from the intrinsic value of the material, seized and utilized by the hordes that successively swept over the sites of classical antiquity.

An exception is furnished by two fragments of large terra-cotta sculpture, which escaped our notice while we were arranging our finds transported from the Heraeum to the Central Museum at Athens. They were rediscovered, by Professor Richard Norton, at the bottom of one of the numberless baskets in our storeroom. He tells me that they are certainly archaic, but were too fragmentary and amorphous to be published.

Another exception is furnished by the fragment of the rude stone pillar referred to in my General Introduction (p. 43), which, though it cannot be called a work of sculpture, must find its place here (Fig. 70), for if I am right in my surmise, it would be the earliest extant symbolical image in stone of a Greek divinity. That such pillars were frequently symbolical renderings of Greek divinities has been recognized; and at the Heraeum we hear of such a pillar as the earliest "image" round which the priestess Callithoë wound her ribbons.[1] This "pillar" was fractured at about half its height, and smaller fragments of the upper part were subsequently found. It was probably hollowed out at the fractured end in later times. In its present state it is 0.91 m. high by 0.47 m. wide at the base. This base is formed by cutting away the four corners of the square block so as to give a hexagonal form to the pillar, and only leaving them at about a foot from the bottom. At the front, moreover, this base projects slightly in the middle as well as at the angles, thus giving it the general appearance of the rudest primitive terra-cottas. The whole pillar tapers upwards; but just before the point where it is now fractured, in the front view there is a slight turn outwards. There is no architectural or other purpose which we could assign to it; and considering the rough primitive method in which it is worked and the corners are beveled away with some rude implement used like a saw, we venture to suggest that the most ancient pillar-like image of Hera has here been preserved to us.



Fig. 70.—Fragment of a Stone Pillar.

[1] Phoronis *ap.* Clem. Alex. *Strom.* I. 24, § 151.

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Another exception is furnished by the fragment of the rude stone pillar referred to in my General Introduction (p. 43), which, though it cannot be called a work of sculpture, must find its place here (Fig. 70), for if I am right in my surmise, it would be the earliest extant symbolical image in stone of a Greek divinity. That such pillars were frequently symbolical renderings of Greek divinities has been recognized; and at the Heraeum we hear of such a pillar as the earliest "image" round which the priestess Callithoë wound her ribbons.[1] This "pillar" was fractured at about half its height, and smaller fragments of the upper part were subsequently found. It was probably hollowed out at the fractured end in later times. In its present state it is 0.91 m. high by 0.47 m. wide at the base. This base is formed by cutting away the four corners of the square block so as to give a hexagonal form to the pillar, and only leaving them at about a foot from the bottom. At the front, moreover, this base projects slightly in the middle as well as at the angles, thus giving it the general appearance of the rudest primitive terra-cottas. The whole pillar tapers upwards; but just before the point where it is now fractured, in the front view there is a slight turn outwards. There is no architectural or other purpose which we could assign to it; and considering the rough primitive method in which it is worked and the corners are beveled away with some rude implement used like a saw, we venture to suggest that the most ancient pillar-like image of Hera has here been preserved to us.



Fig. 70. — Fragment of a Stone Pillar.

[1] Phoronis *ap.* Clem. Alex. *Strom.* I. 24, § 151.

It is a noteworthy fact that out of so large a number of sculptured fragments of stone preserved, there should be only two insignificant pieces of *poros* statuary, all the others being of marble. One of these *poros* fragments represents the hock of a colossal horse. These probably belonged to pedimental groups of early buildings erected many years before the destruction of the Old Temple, and may possibly have come from restorations of this Temple at a date corresponding to the erection of the temple on the Acropolis at Athens, which was adorned by the *poros* groups there found during the last excavations.

SINGLE STATUES.

It is also remarkable that out of this large number of marble fragments there are but few isolated specimens that can, with any degree of probability, be ascribed to separate single statues — statues, that is, which stood by themselves on separate pedestals, whether inside the buildings or in the open air. We can, in fact, distinguish as belonging to this category only the following marbles: —

I. — Four fragments belonging to a female figure of the archaic period about life-size (Fig. 71). **No. 2** is a mass of regular folds gradually converging; straight grooves, not deeply cut, with a rounded rise between each two grooves. **No. 1** is a more elaborate

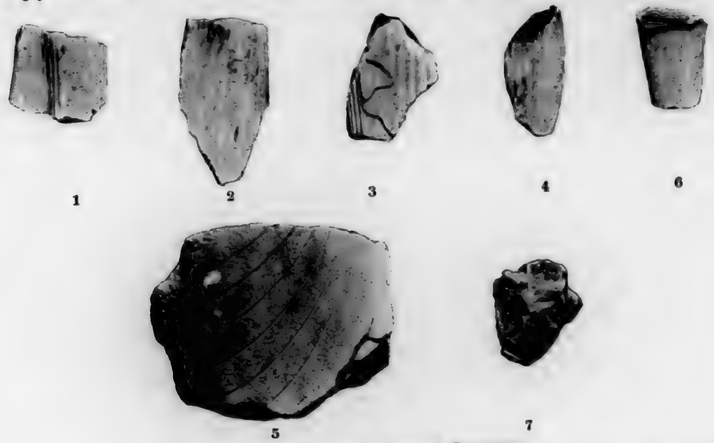


Fig. 71. — Fragments of Archaic Sculpture.

mass of the same drapery, with a broad, central pleat-like fold, from which the smaller folds descend terrace-like. The edges are here more sharply cut, but on either side of this central massing we find the same rounded folds with straight shallow grooves. **No. 3** shows the same general folding, only here the edge of the garment falls in freer zigzags. **No. 4** is of the same size as No. 2. This class of drapery is well known in archaic Greek marble sculpture and has its analogies in extant statues.[1] **No. 6** appears

[1] Cf., e. g., the Hera of Samos (Collignon, *Hist. de la Sculpt. Gr.* I. p. 63); the draped female figures from Delos (Homolle, *Bullet. de Corresp. Hellén.* III. 1879, pls. ii. and iii.); the draped female figures from the Acropolis (Cavvadias, *Musée d'Athènes*, 1886), etc.

to be a fragment of an upper arm extended, with indications of straight folds and possibly of the long hair hanging over the shoulder. A larger fragment, **No. 5**, may have belonged to the same figure, with shallow but firmly cut grooves at larger intervals than in the other fragments, converging towards one point, probably the shoulder. This appears to be a portion of the back covered by the *himation* or upper garment, and being at the back, the elevation of the folds is flatter than in the other fragments. The statue in question could not have belonged to a later time than the first quarter of the fifth century B. C.

II. — Small archaic torso of a female figure, with close-fitting upper garment and indications of a girdle (*zoné*) at the waist (Fig. 71, **No. 7**). There were long curls hanging over either shoulder. There are two terra-cottas of the archaic period[1] which correspond to this marble torso.[2]

Between these fragments of archaic sculpture and those belonging to the Graeco-Roman period there are no works which we could ascribe to single and separate statues. But of the Graeco-Roman period there are portions of two statues, the one evidently over, the other slightly under, life-size.



Fig. 72. — Marble Fragments, probably part of a Female Figure of the Graeco-Roman period.

III. — Five fragments, probably belonging to the same statue, remain of a large draped female figure, probably seated (Fig. 72). The marble appears to me to be Parian. **No. 1** is the upper and front portion of a large female head, from upper lip to occiput. It was found during the digging at the West Building, and was evidently transferred here, at some distance from its original position, in later times. The dimensions are the following: —

Greatest height of fragment (in centimetres)	29.50
Greatest width " "	22.50

[1] These will be figured and described in the second volume.

[2] Cf. the winged "Niké" attributed to Archermus (Collignon, *op. cit.* I. p. 135); the statuette of one of the "Eumenides" from Olympia (P. Gardner, *Journal of Hellen. Studies*, XVI. 1896, p. 277); *Olympia*, III. p. 27, pl. v.; similar types, Collignon, *op. cit.* I. pp. 120 ff.

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Width between outer angle of eyelids	12.
From pupil to pupil	8.30
From root of nose to extant end of nose	8.20
" " " " " end of forehead, middle of hair	4.70
From temple to temple	17.30

The head is evidently iconic, as is clear from the receding forehead with projecting brows, beneath which the eyes appear deep-set and at the same time bulging and heavy, encircled by band-like eyelids. These eyelids seem to join at the outer edge on the same plane, and thus, in connection with their band-like treatment and the bulging iris, suggest (when viewed hastily or from a distance) an archaic character, like that of the eyes in the heads from the Olympia pediments. But upon closer inspection it will be seen that a slight line at the outer angle of the juncture of the lids marks the continuation of the upper lid over the lower lid — a characteristic which, I have long since maintained, marks the change from archaic sculpture to the highest freedom about the year 450 B. C. The superficial "archaic" appearance of the eye is thus counteracted as regards the lids, and the later character is further accentuated by the deeply cut eyeball with pupil. Though I think the prevailing impression which has found its way into literature, that the indication of the eyeball by sculptured incision marks a late Roman origin, is as unfounded as it is widespread, the peculiar deep cutting of the pupil noticeable in the left eye of this head seems to me to point to a later period. In general, however, it will be well for us to remember that in marble statues of all periods where the iris is not indicated by incised lines, it was painted in; and that in heads like the very early head of Hera from the Heraeum at Olympia (*Olympia*, III. pl. i.) there are indications of the incised iris; while in bronze and chryselephantine sculpture the eye was generally rendered in its detail by various materials. It was only later, when in the Hellenistic and Roman period the sculptor, reveling in his technical skill as a pure modeler, dispensed with polychromy in sculpture, that the deeper carving of the pupil came in.

The iconic character of the head is produced further by the deep hollowing below and round the lower eyelid, and the sinking in of the temples at the end of the frontal bone; and the furrow slanting away from the nostril and accentuating the fleshiness of the cheek gives individuality, while indicating a more advanced age.

The elaborate arrangement of the hair, with braid following upon braid wound round the head, is paralleled in many heads of the Roman period, and appears to me characteristic of the coiffure adopted by priestesses. From this fact alone it is not impossible that the statue may have been that of a priestess of Hera in Roman times which, according to Pausanias (II. 16. 5), stood before the temple. But the late character of the work is manifest from the mechanical and, at the same time, slovenly treatment of the braids or twisted meshes of hair. These are indicated by means of shallow parallel grooves subdividing the hair at equal distances, without any variety or modeling to suggest the real texture of hair.

No. 2 is the largest fragment probably belonging to this statue. It seems to represent the shoulder and upper arm covered by drapery. The dimensions are: —

From top of shoulder to massed folds below centre (in centimetres)	46.
Extreme height	53.
" width	29.
" depth	22.50

The folding is flat and superficial on the side of the shoulder and arm, deeper on the

mass hanging down inside the shoulder. But these more deeply cut fold-grooves are mechanical and coarse and throughout show the use of the drill. The short groove between the two deeper and longer folds on the top illustrates this.

No. 3. Part of a draped upper arm, with bare forearm of similar dimensions and marble to the previous fragments. What remains of the folding is similar in late character to the previous fragment. Compare the mechanical cutting, the shallower short perpendicular fold near the bare portion of the arm. It is not impossible that fragments **4** (hand) and **5** (thumb with round object) belonged to this arm, though the fractures are not such as to allow of piecing them together. It cannot be determined with certainty what the object to which the thumb is attached is, but it seems probable that it was the internal boss of a sacrificial patera held in the extended hand of the priestess, an action which is familiar in statues, vases, and terra-cottas. The fractured foot with elaborate sandal (**6**) also may have belonged to this statue.

The dimensions of the fragment of arm are: —

Extreme length (in centimetres)	46.
" width	29.
" depth	21.
Inside elbow joint to end of fractured forearm	18.
Bare forearm	11.50

IV. — Torso of a draped figure, probably male, two thirds life-size (Fig. 73). Found at no great depth on the south slope. It apparently represents a boy, holding a large bird (dove?) in his left hand. Dowel-holes at the neck of the figure and of the bird probably point to later restorations, after the head had been broken off. The figure is clad in three distinct garments: (1) a chiton which appears clearly under the triangular opening of the second garment below the neck, (2) a thick, fluffy shirt-like garment, either of sheepskin or of rough, hairy lamb's wool, such as peasants and shepherds, particularly, wear to-day, and (3) a heavy himation over the back, the ends falling over the left shoulder and arm, which it covers; drawn under the left arm, it leaves the greater portion of the left arm and shoulder bare. The workmanship is rough and unskillful, and is either quite provincial or very late, or both.



Fig. 73. — Late Torso, found on the South Slope.

V. — Finally there are several smaller fragments (Fig. 74) — heads of various sizes and workmanship, as well as an object, perhaps representing a hydria — which cannot be assigned to the main body of Argive sculpture with any degree of probability. The only one of these about which there can be any doubt is the much corroded head with a portion of neck, cheek, and lower portion of hair, between which and the fractured upper portion of the head there is a sharply cut groove. The fragment of a helmet distinctly belongs to the metopes.

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ARCHITECTURAL SCULPTURE.

The whole large mass of sculptured marble fragments, with these exceptions, belongs to one date and style of workmanship, and, as we shall later see, forms parts of the sculptured ornamentation of buildings, either metopes, friezes, or pedimental groups.



Fig. 74. — Fragments from the Argive Heraeum.

Yet it must not be believed that in the ancient days of the Heraeum there were not numerous single statues distributed over the sacred precinct. Pausanias[1] definitely mentions statues of priestesses and of heroes as standing in front of the temple. Some of the bases belonging to these and other statues were found in our excavations at the east end of the temple. From analogous experience in other excavations (Olympia, Delphi, etc.), we know that a small portion of the great number of statues which studded the sacred precincts of ancient sanctuaries, like trees in a grove, have come down to us, and how vastly the works of architectural sculpture predominate in proportion.

[1] Paus. II. 17. 3. ἀνδριάντες τε ἑστήκασι πρὸ τῆς ἐσόδου, καὶ γυναικῶν αἱ γεγόνασιν ἱέρειαι τῆς Ἥρας, καὶ ἡρώων ἄλλων τε καὶ Ὀρέστου· τὸν γὰρ ἐπίγραμμα ἔχοντα ὡς εἴη βασιλεὺς Ἀβγουστος, Ὀρέστην εἶναι λέγουσιν. *Ibid.* 7. Ἀργεῖοι δὲ καίπερ κακοῦ τηλικούτου παρόντος σφίσι τὴν εἰκόνα οὐ καθεῖλον τῆς Χρυσηίδος, ἀνάκειται δὲ καὶ ἐς τοὺς τοῦ ναοῦ τοῦ κατακαυθέντος ἔμπροσθεν. The latter passage seems to show that some of the statues of priestesses before B. C. 423 still stood in front of the ruins of the First Temple in the time of Pausanias, while the statues before the Second Temple all belonged to dates subsequent to B. C. 420. Statues of priestesses stood also before the temple of Demeter at Hermione (Paus. II. 35. 8), and at Cerynea in Achaia. There were statues of women, said to be priestesses, at the entrance to the sanctuary of the Eumenides. (Paus. VII. 25. 7.) A statuette at Paestum has been found dedicated to Athena, representing one of the girl basket-bearers (κανηφόροι) who figured in her worship. Professor Curtius thinks that there may have been whole rows of such statuettes in the temples. See *Arch. Zeit.* 1880, pp. 27–30; Curtius, *Gesammelte Abhandlungen*, II. pp. 286–294. The Argives dated their years by the priesthood of Hera. Hellanicus the historian, B. C. 480–395, wrote a history of the priestesses of the Argive Hera, which must have been of great importance for Greek chronology. See Preller, *Ausgewählte Aufsätze*, pp. 51 ff.; *Fragmenta histor. Graec.* ed. Müller, I. pp. xxvii. *seq.* 51 *seq.* Frazer's *Paus.* III. (notes), p. 182. Similar bases of statues to those in front of the Heraeum have been found also at Epidaurus. Statues and statuettes of basket-bearers have been found at Athens, Eleusis — in fact, on most sites where there was a temple dedicated to a female divinity.

This is due to the fact, mentioned above, that a large proportion of such single statues were of bronze, which were the first to be carried off, and, furthermore, to the fact that statues which stood below, on the level of the terrace, were more readily destroyed and taken away by the iconoclast and despoiler than those which ornamented metopes or pediments of a high building. We remember, for instance, what difficulties the Venetians, and later Lord Elgin, had in lowering statues from the Parthenon. At the Heraeum such statues could be procured only after the building had fallen in, and then had to be extracted laboriously from beneath the *débris* of the ruined building.

Undoubtedly this was the fate of this ancient sanctuary of Hera. From its lofty position on the slopes of the hills, it commanded the vast plain of Argos. But at the same time this glorious group of resplendent buildings had to pay, as it were, the penalty of its serene position and of the attractive beauty of its shrine gleaming through the limpid atmosphere of Hellas to the furthest confines of the mountain-encircled plain. There was no point from which it could not be seen. And thus the Byzantines, Franks or Normans, Slavs or Albanians, Venetians, Turks and modern Greek peasants, passing through or settling in any part of the plain, made the Heraeum their stone quarry and — their lime-kiln.[1] The "Larisa" or mediaeval citadel of the town of Argos, the Palamidi of Nauplia, and, nearer home, the Byzantine and Frankish churches of the neighboring villages, Chonica, Merbaka, Anyphi, Priphtani, Pasia, as also the well-stones, lintels, and thresholds of the peasants' houses, all made heavy drafts upon the ruined Heraeum for their building material.

To this must be added as an important fact (to account for the comparatively small remains of extant architectural sculpture), that in the manufacture of the great amount of excellent mortar used by these later builders, the lime produced by the burning of marble was preferred to all other, and that thus marble sculpture of all kinds was especially sought after.

What was not carried away or destroyed by the hand of man was undone by nature. The buildings that were not actually pulled down were shaken down by earthquakes,[2] and the remains of sculpture lying about the ground and beneath the *débris* of the buildings were either carried off by the despoiler, or further mutilated by the iconoclastic hordes passing through or dwelling in the Argive plain, because they represented Pagan religion. The great height from which the sculptures of pediment or entablature fell to the ground caused the thinner and more undercut portions, extremities of bodies and drapery, to break off most freely. It was not worth the barbarian's while to transport these smaller fragments to his lime-kiln or to use them as building stones; thus the larger portable masses of marble — torsi, larger heads, etc. — were first chosen by him, and, if too large, they were split or cut into portable larger fragments.

We can thus understand why the excavations yielded so few specimens of sculpture besides architectural sculpture, and, furthermore, why there should be found so few larger or complete specimens of even these works; we can realize also how fortunate are the accidents that have yielded such fine and representative specimens of important sculpture, for which, under these untoward conditions, we hardly dared hope.

The vast number of smaller pieces, the numerous hands and feet of men and horses,

[1] See W. G. Clark, *Peloponnesus*, p. 84.

[2] That there must have been some such destruction, and that it was probably by earthquakes, is proved by metope fragments found underneath other heaped-up fragments from the South Stoa on the pavement of the latter, the roof having been broken while other portions of the Stoa stood when the temple fell in.

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Fig. 74. — Fragments from the Argive Heraeum.

Yet it must not be believed that in the ancient days of the Heraeum there were not numerous single statues distributed over the sacred precinct. Pausanias[1] definitely mentions statues of priestesses and of heroes as standing in front of the temple. Some of the bases belonging to these and other statues were found in our excavations at the east end of the temple. From analogous experience in other excavations (Olympia, Delphi, etc.), we know that a small portion of the great number of statues which studded the sacred precincts of ancient sanctuaries, like trees in a grove, have come down to us, and how vastly the works of architectural sculpture predominate in proportion.

[1] Paus. II. 17. 3. ἀνδριάντες τε ἑστήκασι πρὸ τῆς ἐσόδου, καὶ γυναικῶν αἱ γεγόνασιν ἱέρειαι τῆς Ἥρας, καὶ ἡρώων ἄλλων τε καὶ Ὀρέστου· τὸν γὰρ ἐπίγραμμα ἔχοντα ὡς εἴη Βασιλεὺς Ἀργουστος, Ὀρέστην εἶναι λέγουσιν. *Ibid.* 7. Ἀργεῖοι δὲ καίπερ κακοῦ τηλικούτου παρόντος σφίσι τὴν εἰκόνα οὐ καθεῖλον τῆς Χρυσηίδος, ἀνάκειται δὲ καὶ ἐς τοὺς τοῦ ναοῦ τοῦ κατακαυθέντος ἔμπροσθεν. The latter passage seems to show that some of the statues of priestesses before B. C. 423 still stood in front of the ruins of the First Temple in the time of Pausanias, while the statues before the Second Temple all belonged to dates subsequent to B. C. 420. Statues of priestesses stood also before the temple of Demeter at Hermione (Paus. II. 35. 8), and at Cerynea in Achaia. There were statues of women, said to be priestesses, at the entrance to the sanctuary of the Eumenides. (Paus. VII. 25. 7.) A statuette at Paestum has been found dedicated to Athena, representing one of the girl basket-bearers (κανηφόραι) who figured in her worship. Professor Curtius thinks that there may have been whole rows of such statuettes in the temples. See *Arch. Zeit.* 1880, pp. 27–30; Curtius, *Gesammelte Abhandlungen*, II. pp. 286–294. The Argives dated their years by the priesthood of Hera. Hellanicus the historian, B. C. 480–395, wrote a history of the priestesses of the Argive Hera, which must have been of great importance for Greek chronology. See Preller, *Ausgewählte Aufsätze*, pp. 51 ff.; *Fragmenta histor. Graec.* ed. Müller, I. pp. xxvii. *seq.* 51 *seq.* Frazer's *Paus.* III. (notes), p. 182. Similar bases of statues to those in front of the Heraeum have been found also at Epidaurus. Statues and statuettes of basket-bearers have been found at Athens, Eleusis — in fact, on most sites where there was a temple dedicated to a female divinity.

This is due to the fact, mentioned above, that a large proportion of such single statues were of bronze, which were the first to be carried off, and, furthermore, to the fact that statues which stood below, on the level of the terrace, were more readily destroyed and taken away by the iconoclast and despoiler than those which ornamented metopes or pediments of a high building. We remember, for instance, what difficulties the Venetians, and later Lord Elgin, had in lowering statues from the Parthenon. At the Heraeum such statues could be procured only after the building had fallen in, and then had to be extracted laboriously from beneath the *débris* of the ruined building.

Undoubtedly this was the fate of this ancient sanctuary of Hera. From its lofty position on the slopes of the hills, it commanded the vast plain of Argos. But at the same time this glorious group of resplendent buildings had to pay, as it were, the penalty of its serene position and of the attractive beauty of its shrine gleaming through the limpid atmosphere of Hellas to the furthest confines of the mountain-encircled plain. There was no point from which it could not be seen. And thus the Byzantines, Franks or Normans, Slavs or Albanians, Venetians, Turks and modern Greek peasants, passing through or settling in any part of the plain, made the Heraeum their stone quarry and — their lime-kiln.[1] The "Larisa" or mediaeval citadel of the town of Argos, the Palamidi of Nauplia, and, nearer home, the Byzantine and Frankish churches of the neighboring villages, Chonica, Merbaka, Anyphi, Priphtani, Pasia, as also the well-stones, lintels, and thresholds of the peasants' houses, all made heavy drafts upon the ruined Heraeum for their building material.

To this must be added as an important fact (to account for the comparatively small remains of extant architectural sculpture), that in the manufacture of the great amount of excellent mortar used by these later builders, the lime produced by the burning of marble was preferred to all other, and that thus marble sculpture of all kinds was especially sought after.

What was not carried away or destroyed by the hand of man was undone by nature. The buildings that were not actually pulled down were shaken down by earthquakes,[2] and the remains of sculpture lying about the ground and beneath the *débris* of the buildings were either carried off by the despoiler, or further mutilated by the iconoclastic hordes passing through or dwelling in the Argive plain, because they represented Pagan religion. The great height from which the sculptures of pediment or entablature fell to the ground caused the thinner and more undercut portions, extremities of bodies and drapery, to break off most freely. It was not worth the barbarian's while to transport these smaller fragments to his lime-kiln or to use them as building stones; thus the larger portable masses of marble — torsi, larger heads, etc. — were first chosen by him, and, if too large, they were split or cut into portable larger fragments.

We can thus understand why the excavations yielded so few specimens of sculpture besides architectural sculpture, and, furthermore, why there should be found so few larger or complete specimens of even these works; we can realize also how fortunate are the accidents that have yielded such fine and representative specimens of important sculpture, for which, under these untoward conditions, we hardly dared hope.

The vast number of smaller pieces, the numerous hands and feet of men and horses,

[1] See W. G. Clark, *Peloponnesus*, p. 84.

[2] That there must have been some such destruction, and that it was probably by earthquakes, is proved by metope fragments found underneath other heaped-up fragments from the South Stoa on the pavement of the latter, the roof having been broken while other portions of the Stoa stood when the temple fell in.

of armor and drapery, evidently belonging to metopes or friezes in relief, of themselves make us realize that the Second Temple was decorated with sixty-four metopes; while, as will presently be proved, the many fragments of larger figures in the round belonged to the pedimental groups of that temple, which each contained at least thirteen life-size figures — together at least twenty-six, and probably well over thirty statues in the round. Yet though of the metopes only three larger pieces and, fortunately for us, seven complete heads were found, only one of these larger pieces could, after patient search among the fragments, be so supplemented as to form an almost complete metope (PLATE XXX.). Of the pedimental statues there is only one torso and a few larger pieces, while we found of these but one head, the attribution of which to a pediment, however, is not beyond all doubt.

Still we may maintain, with some degree of certainty, that all these marble fragments formed part of the sculptured decoration of the Second Temple (the only architectural sculpture noted by Pausanias on this site), and that the other buildings in the sacred precinct of the same period give no evidence of having been decorated with figures and groups either in relief or in the round.

These conclusions are based upon the collective arguments which will form the remainder of this introduction.

The fragments of relief work, as well as of statues in the round, are all of the same "Parian" marble.[1]

THE METOPES.

That metopes surmounted the columns of this Doric temple is, of course, proved architecturally. The question is whether all, or how many, of these were decorated with sculpture in relief.

The existence of such sculptured decorations is proved by Pausanias's phrase *ὑπὲρ τοὺς κίονας*. Among our finds there are marble reliefs which were undoubtedly from metopes of this temple. There are no less than twenty-nine separate fragments which show the high relief work rising from the background of the metope; while two metopes are nearly complete, and at least five larger fragments give us the essential portion of a figure on a metope. From these as well as from architectural evidence we learn that these metopes were 1.029 m. high by 0.978 m. wide, and that the block from which they were carved was about 0.34 m. thick. The unworked backing, or portion remaining for the background, averages about 9 cm. The highest point of relief from the background is 26 cm. This corresponds with the height of the relief of the metopes of the Parthenon. The extreme original thickness of the metopes would thus be about 34 cm., or about one foot. Out of this background the relief rises very boldly, the heads and the limbs being quite undercut and worked in the round. In falling these would break away from the relief, while the thin portions of the background would also be fractured into many

[1] I did not think that on so important and technical a question as the identification of different marbles I could trust my own judgment; and considering the scientific mineralogical work done by Professor Lepsius, of Darmstadt, on Greek marbles, I felt that in this instance his help ought to be invoked. Accordingly I sent him specimens of marble chips taken from the fractured portions of our sculptures, which were necessarily very small. He warned me in his letter that in view of the smallness of the specimens it would be difficult if not impossible to identify the marbles beyond all doubt.

These doubts and misgivings of Professor Lepsius have been fully justified, for portions of what can be proved to be the same metopes were assigned to different marbles. I thus abide by the decision at which I arrived and which is supported by the judgment of Dr. H. S. Washington, as well as our helpful friend Mr. Kalourgis, the marble-worker at the Museum at Athens, in considering all these heads and fragments to be of Parian marble.

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Contrary to what might be inferred from the description of Pausanias (see below) and from analogous buildings, such as the "Theseum" at Athens, the sculptured metopes of the Heraeum were not confined to front and back, — perhaps overlapping for a few intercolumniations on either side, — but ran round the whole of the temple. This might of itself have been inferred from the comparatively great number of limbs, hands, and feet belonging to such metopes which have come down to us. A general view of fragments on the floor of one gallery in the Athens museum, assigned to us for purposes of sorting, will illustrate this (see Fig. 75).[1] This is furthermore confirmed by the fact that a



FIG. 75. — MARBLE FRAGMENTS, AS ARRANGED FOR SORTING ON THE FLOOR OF A ROOM IN THE CENTRAL MUSEUM, ATHENS.

The statues in the background do not belong to the Heraeum Marbles. The statue on the right is the Diadumenos from Delos.

number of metope fragments were actually found, not at the front and back of the temple, but at the north and south sides. Several of these (among them one complete and one fragmentary metope head) were discovered on the spot on which they must have fallen from the entablature which is on the south side of the temple. Crashing through the roof of the South Stoa, these and other fragments from the falling temple above were deposited on the floor of this Stoa, and were covered anew when the Stoa itself was destroyed.

There is a further question, whether all these fragments of relief sculpture, which

[1] Rangabé (*Ausgrabungen*, etc., p. 23) mentions 42 fragments of hands and arms, and 160 fragments of feet and legs found during his tentative excavations.

of armor and drapery, evidently belonging to metopes or friezes in relief, of themselves make us realize that the Second Temple was decorated with sixty-four metopes; while, as will presently be proved, the many fragments of larger figures in the round belonged to the pedimental groups of that temple, which each contained at least thirteen life-size figures — together at least twenty-six, and probably well over thirty statues in the round. Yet though of the metopes only three larger pieces and, fortunately for us, seven complete heads were found, only one of these larger pieces could, after patient search among the fragments, be so supplemented as to form an almost complete metope (PLATE XXX.). Of the pedimental statues there is only one torso and a few larger pieces, while we found of these but one head, the attribution of which to a pediment, however, is not beyond all doubt.

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Curtius[1] and, following him, Welcker[2] assign the Capture of Troy to the western pediment, and then appropriately place the Gigantomachia below the Birth of Zeus in the metopes on the east side, leaving scenes from the Trojan War to adorn the metopes on the west, beneath the crowning event in the war, the Capture of Troy. Professor Tarbell and Dr. Bates[3] put forward the conjecture — the ground for which I fail to see — that the Birth of Zeus and the Battle of Greeks and Trojans occupied the pediments, the Gigantomachia and Iliupersis occupying the metopes. Mr. Frazer,[4] while considering my first suggestion "plausible," inclines more towards the restoration of Curtius.

In the preliminary publications of our first year's finds,[5] I based my conjectural distribution chiefly upon the comparison of this passage in Pausanias with his description of the pediments of the Parthenon (I. 24, 25). The description would thus follow the usual method of the periegete in enumerating the various objects and places as he successively saw them in their place, and he would thus group together first those scenes at the front and then those at the back. The further analogy of the Parthenon, in which a scene from the Capture of Troy was represented in the metopes, and the analogy of a scene of departure and preparation to be found in the eastern pediment of the temple of Zeus at Olympia, led me to assign the Capture of Troy to the metopes and the departure of the heroes for Troy to the pediment. The appropriateness of representing the moment of preparation for their departure to Ilion is manifest, as, according to a late tradition,[6] the Heraeum was the spot chosen for this purpose.



FIG. 76. — MARBLE IMAGE, WITH HAND GRASPING IT AT THE BACK. Probably from the Western Pediment of the Second Temple.

But the bearing of at least one of our subsequent finds, the significance of which is made clearer by the very comparison with the metopes of the Parthenon, causes me to doubt the claims of my own conjecture and to revert to the hypothesis of Curtius, the strength of which, on other grounds, I had always felt. The find in question is the archaic torso of a *ξόανον*, round the back of which a life-sized arm is roughly sculptured — evidently the arm of one clasping the sacred image as a protection against an advancing foe (Fig. 76). This finds its complete parallel in the scene represented on a metope of the Parthenon showing Helen clasping the Palladium, while Menelaus is advancing

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[6] Dictys Cretens. *Bell. Troj.* I. 16.

towards her, a scene so ingeniously reconstructed from the fragmentary metopes by Michaelis in[1] a comparison with a red-figured vase painting. But our *ξόανον*, with the arm, must, from the dimensions,[2] be assigned to the pediment and not to the metopes, and I therefore conclude with Curtius and Welcker that the general representation of the Trojan War is to be assigned to the western pediment, and the separate scenes from the Trojan War to the metopes below it.[3]

The disjointed scenes from the Trojan War would thus reach their climax in the most important and final event in that great drama, the Capture of Troy in the pediment. It is probable that the patron divinity of the Atridae, Hera, was the central figure in this pediment, presiding over the victory of the Greeks. The highest types of Hellenic life in divine and heroic mythology would thus be forcibly presented in the front and back of this temple, as in the Parthenon a great and consistent idea combines the sculptures of the front and back. We should then have represented on the Heraeum: — in the front, the establishment of the rule of the great Hellenic divinity, Zeus, whose birth marks the downfall of Cronus and the overthrow of the giants by Zeus and the divinities over whom he presides; in the rear, the assertion of the national unity and national superiority of the Hellenic people over whom these gods rule, in the overthrow of the great eastern rival, and the victory of the heroic ancestors of the historical Hellenes (headed by the Argolic Atridae). All these sculptures illustrate the great steps in the establishment of Hellenic civilization, its social, conjugal, and domestic laws, over which Zeus and Hera presided. The front refers to Zeus, as the rear shows the sway of Hera, in truly typical scenes from Greek mythology.



Fig. 77. — Fragment of a Metope, with Pelta.

In the preliminary publication I had also suggested that Pausanias may have described merely the metopes in front and rear, and that — as we should expect from his cursory description of the Heraeum — he had omitted all mention of the scenes depicted in the metopes of the side. Even after our first year's excavation it appeared to me probable that an Amazonomachia was represented in the metopes of at least one of the sides. This hypothesis has since received confirmation from our discoveries. Among our marbles there are a head (Plate XXXI., No. 3) and several torsi (Plate XXXV.) which are distinctly of the type of Amazons; another fragment of relief appears to me a pelta (Fig. 77), the shield characteristic of Amazons.

[1] *Der Parthenon*, p. 139.

[2] The dimensions of this fragment are: —

Extreme height (in centimetres)	34.
" breadth	27.
" thickness	15.
From breast to breast	9.5
Thickest part of arm on back	8.2
Length of arm from wrist to elbow	22.

[3] I bow to the force of Mr. Frazer's criticism (*l. c.*) of my rendering of the *τὰ δὲ ἐς τὸν πρὸς Τροίαν πόλεμον* as implying the preparation for the departure.

Moreover it is hardly conceivable that two definite battle-scenes could have been continued throughout sixty-six metopes. Even on the sides of the Parthenon the series of Centauromachia-metopes was interrupted and varied by interpolated subjects. Thus the Amazonomachia was probably introduced on one or both of the long sides of the Heraeum. If on one only, the other side may have been decorated with the Centauromachia, though no traces of this subject have come down to us among our fragments.

According to the evidence at our command, both literary and monumental, we should assign the following subjects to the different parts of sculptured ornamentation on the Heraeum: —

The eastern pediment contained the Birth of Zeus — perhaps with Cronus and Rhea, whose rule is about to cease at that moment, in the centre. The western pediment had the Capture of Troy, with perhaps Hera, or Zeus and Hera, presiding over this first victory of the Hellenic race under their divine sway. The eastern metopes contained scenes from the Gigantomachia, as the western had representations from the Trojan War; and these scenes may have overlapped from the east and west front to either side on north and south. But the bulk of the metopes on these sides were decorated with the Amazonomachia and, possibly, the Centauromachia or some similar mythological scene. These (with the exception of the Birth of Zeus, which appears to have been an individual and



Fig. 78. — Corner of the Room in the Central Museum, Athens, containing Fragments of Drapery from Figures in the Round, probably from the Pediments of the Heraeum.

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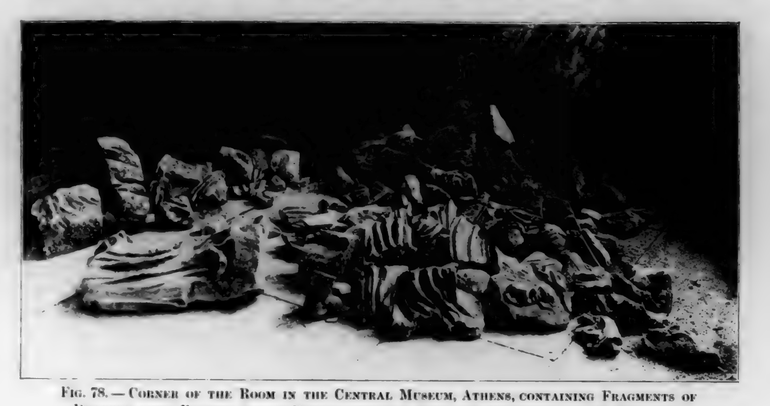


Fig. 78. — Corner of the Room in the Central Museum, Athens, containing Fragments of Drapery from Figures in the Round, probably from the Pediments of the Heraeum.

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It might perhaps be held that some of these fragments of drapery, drawn tightly round the limbs or fluttering freely, belonged to Niké-like figures used as Acroteria or corner decorations, as at Epidaurus. But these fragments point to statues in life-size, which Acroteria would not have been. Furthermore, even the extant fragments furnish too large a number of such figures for Acroteria. Finally, several of these distinctly show that the statues to which they belonged were meant to be seen from a side view and not from all sides, and this treatment clearly indicates pedimental statuary.



Fig. 79. — Fragment of a Leg resting upon a Cushion, probably from a Pediment of the Heraeum.

Further, the fragment representing the lower portion of a leg resting upon a cushion (Fig. 79) can hardly be explained unless as a part of a reclining figure at the angle of one of the pediments, as we find that the figures at the angles of the western pediment of the temple of Zeus at Olympia were resting their arms on cushions.[2]

Finally, this is confirmed by the backs of several extant fragments. First, the beautiful torso of a draped female figure found by Rangabé (Plate XXXVII.) shows, with the exquisite finish of the front, a rude treatment of the back, which could be found only in a pedimental figure. The last and most convincing evidence is furnished by a small

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[2] The dimensions are: —

Extreme length from end of drapery to button of cushion (in centimetres)	36.
Extreme breadth along leg	32.
Thickness	24.
Length of leg from ends of fractures	32.
From below knee to fracture at ankle	23.
Thickness of calf	9.3

fragment of a large figure (Fig. 80), a piece of drapery and shoulder, of which the back, treated in the same manner as the female torso, has a large square hole for a dowel, which, as we know from the Parthenon, was the regular means of fixing the pedimental statues to the tympanum of the pediment.[1]

We shall be less astonished to find divergences of dimension among the pedimental figures than in the case of the fragments from the metopes. We find these divergences



Fig. 80. — Fragment of a Pedimental Figure from the Heraeum. The back view shows the dowel-hole.

in the earliest stages of pedimental sculpture in the round, such as the *poros* sculptures from the Acropolis,[2] the figures found at Delos by the French,[3] the pediments from Aegina in which the statues of the eastern pediment are on a distinctly larger scale than those of the western,[4] the central figures of the Olympia pediments,[5] which are much larger than those in the angles. In later times, in the Parthenon, we find that the torso of Poseidon and that of Athene are on a much larger scale than are those further removed from the centre. The same difference is found in the statues ascribed to the Epidaurian temple of Asclepius, and many others.

While, therefore, the pedimental sculpture of the Heraeum was in scale about life-size, some fragments, such as the leg on the cushion, which probably was placed at the extreme angle of the pediment, as well as several nude legs and feet of warriors (see Fig. 81), are slightly below life-size and differ slightly among themselves.

There are also slight divergences of workmanship and style, — certainly not greater than are to be found among the Parthenon marbles, if as great, — yet all insignificant in comparison with the technical resemblances.

THE GENERAL STYLE OF THE HERAEUM MARBLES.

The general workmanship, the actual method of carving the marble, and the peculiar use of tools are markedly the same, not only among the fragments coming from the

[1] The dimensions of this fragment of shoulder and front of drapery are: —

Extreme height of fragment (in centimetres)	27.
" breadth	37.
Thickness	21.
The dowel-hole is (in mm.) in height	5
in width	4
in depth	7

[2] Collignon, *op. cit.* pp. 205–215.

[3] *Bullet. de Corr. Hellén.* III. (1879), pp. 515 ff. (Homolle).

[4] Collignon, pp. 286–300.

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metopes, but also in those which we assign to the pediments. In contradistinction to the Parthenon marbles (where even the parts that were not visible to the spectator, the backs of the pedimental figures, received a comparatively high finish), these works are roughly blocked out on the back and on the inner side of the figures that are freely undercut from the background of the metopes.[1] The treatment of the back of the large pedimental torso (PLATE XXXVII.) illustrates this fully. This rough working of the invisible portions stands in the strongest contrast to the high and delicate finish of the nude and the drapery where they were visible.

The blocking out and the working away of superfluous marble (the rough surface thus remaining invisible, or being carefully worked over in the finish when visible) was carried out, moreover, in a peculiar manner, the traces of which can still be clearly recognized. This peculiar method consists in the free use that is made of the drill. The drill was of course frequently resorted to, to bore holes for the fixing of bronze ornaments or accessories to the statues, as is evident in the earhole of the large Hera head (FRONTISPIECE and PLATE XXXVI.), at the side of the helmet (PLATE XXXI., 4), at the side of the large torso from the pediments (PLATE XXXVII.), or the warrior head from the metopes (PLATE XXX.); as well as in the hands holding swords and spears (Fig. 82). Its use is not uncommon for this purpose, for we find it as early as in the figures from the pediment of the temple of Athena at Aegina. But a more peculiar use of the drill for blocking out or undercutting the marble is manifest in these Argive sculptures, and this method I have not met before.



FIG. 81. — LEGS AND OTHER FRAGMENTS, PROBABLY FROM THE PEDIMENTS OF THE HERAEUM.

When the sculptor had to cut away the marble from the back or the side of a head, as it rose freely from the background in the high relief of the metopes, he saved himself trouble by using the drill, which he ran through the portion of marble between the head and the background, which was to be worked away in order that the head should stand out freely. He thus weakened the "isthmus" of marble, so that it did not require violent chopping with mallet and chisel to cut away the solid marble, for this might have fractured the whole head. Thus in the female head (PLATE XXXII., 1 and 2), at the unfinished side nearest the background, we see two broad runs or grooves which were forced through the marble "isthmus" holding the head to the background. It was thus made easy for the sculptor to work away the marble from the back of the head without fractures. This same method, with the same use of the drill, we find applied, not only to other heads from the metopes, such as the back of the head in PLATE XXXI., 1 and 2, but also in other portions of figures, even in those from the pediments. So, for instance, the fractured lower portion of a draped figure from the pediments (PLATE XXXVIII.) clearly shows beneath the drapery that has been broken away, behind the foot and between it and the plinth upon which the figure stood, the hollowing out and undercutting of a triangular space by means of a series of such drill holes.

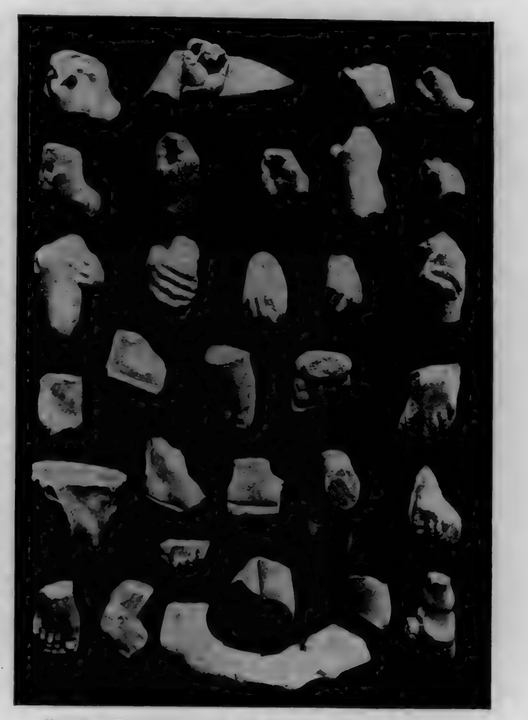


FIG. 82. — FRAGMENTS FROM THE METOPES: HANDS THAT HELD SWORDS AND SPEARS, AND FEET.

Now in later times, especially in the Hellenistic and Graeco-Roman periods, the drill was constantly used by sculptors (see above, p. 143). But in those works this mechanical appliance was used on the visible finished surface, in order to economize the artistic labor of the sculptor in giving grooves to the drapery and similar phases of actual modeling. The result is an inferior artistic effect, in which the mechanical working obtrudes itself to the detriment of the illusion which careful modeling and hand finish (such as we find in our Argive marbles) produced upon the spectator. In our marbles the drill is never used to work the finished fold groove, but has only been applied for the rough blocking out

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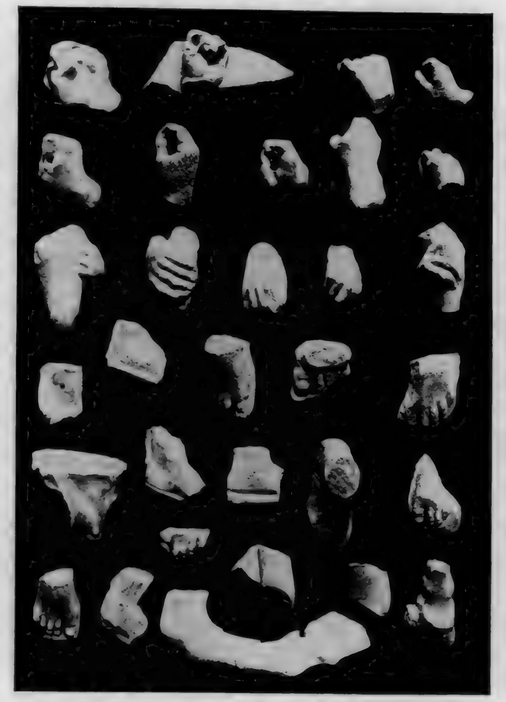


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and working away of superfluous material. We detect its use only in those portions which are not meant to be seen.

In all visible portions we must be struck by the complete naturalness and truth in the rendering of pose and movement, and by the exquisite finish of the surface. In this the mechanical working of the material never obtrudes itself, and each minutest part is treated with a care and finish unequaled or, at all events, unsurpassed by any extant works. And this minute finish becomes the more remarkable when we remember that the figures in the metopes were only half life-size, and, placed as they were about thirty-eight feet from the ground, were hardly visible to the spectator in the details of their elaboration.

The freedom, naturalness, and boldness of pose and movement in all these figures is not only evident in a few rather complete torsi that have come down to us, such as the two metopes of Plates XXX. and XXXIV., the draped torsi from the pediments of Plate XXXVIII., but in similar fragments of bodies (Fig. 83), as well as in the legs, hands, and feet of Fig. 82, all of which enable us to reconstruct in our minds the flowing composition of metopes and pediments. The attitudes and movements of these figures are, on the one hand, as far removed from the constraint of the archaic period or the severe art of about the middle of the fifth century as they are, on the other hand, from the violent contortions of the Hellenistic period, or even the more passionate movement which began with Scopas.



Fig. 83. — Fragments from the Metopes, illustrating chiefly the sharp yet delicate cutting of the folds in drapery.

As regards our appreciation of the treatment of the nude figure, we can only fall back upon the beautifully preserved torso of Plate XXXIV., — which, however, is enough in itself, — and the numerous smaller fragments of bodies, legs, hands, and feet. The treatment of the nude female figure we can divine only through the treatment of those portions which are covered with the thin undergarment, and this leads us to form the very highest estimate in this particular. The absence of the nude female figure among so great a number of fragments perhaps justifies us in concluding that the female figure was not represented in its nude form; and this would strengthen our general conclusion that these works are not to be placed in the fourth century B. C., but in the fifth. Judging from the extant remains of draped female figures, however, we may venture to say that at least as regards the supreme finish of modeling, no works of architectural sculpture manifest the same perfection. It is not too much to say that not one of the Lapithae from the Parthenon metopes shows the same delicacy of modeling and finished surface work as does the torso of the youthful nude warrior from our metope. This is evident if we examine every portion of the body; and for the supreme finish of detail, I would draw special attention to the hand pressed against the armpit, and to the peculiar and unique treatment of the inguinal region, which is so striking that anatomists have assured me it must have been copied from an individual model showing this abnormal idiosyncrasy.[1]

In spite of this minute finish it can never be said that the figures, taken as a whole, present that exaggeration and obtrusion of the anatomical study of muscles or, on the other hand, that extreme softness and sensuousness (*morbidezza*) in the treatment of the nude which characterizes the art of a later period. There is in them still a certain hardihood that shows them to be the offshoot of a Peloponnesian feeling, the precursors of which we might find in the Aeginetan marbles.

In the treatment of the drapery, the fragments, whether in relief or in the round, all manifest the same character. They are bold and free and delicate without conventionalism or restraint, and yet without florid exaggeration or want of conciseness. The larger folds cover the limbs in broad masses, freely undercut and sharp in their edges, resembling in this respect the pedimental drapery of the Parthenon. Yet if we except the Reclining Fate (or Thalassa, as I should call her) from the eastern pediment of the Parthenon, the elaboration or finish of the drapery in the majority of our figures and fragments goes a step further and finds its nearest parallel in some of the Nikés from the balustrade of the temple of Niké-Apteros. This is especially the case with the system of small folds encircling or starting away from the breasts of female figures. These folds are worked in delicate relief from the smooth surfaces where the thin drapery is stretched over the rounded forms; yet in spite of the delicacy of these reliefs, they never lose their sharpness of edge, as, for instance, is the case with the Olympian Niké by Paeonius.

No student who gives some time to the examination of the numerous fragments of drapery from these marbles can fail to receive the impression that they are all of the same workmanship and style, whether they belong to figures in relief or in the round.

If now we turn to the heads, we shall find, taking them as a whole, that, compared with the treatment of the bodies, nude and draped, they are comparatively severer. To begin with, not one of them can be said to reflect in its expression the strong movement and action which are manifest in the treatment of the extant bodies and as the scenes we know to have been depicted would lead us to expect. The female head of Plate XXXII., 3, was evidently pulled to the side with violence, the hair on the top of the head clutched by a warrior; and yet the expression of emotion was limited to the attitude of the head and a very delicate and slight indication in the upward and sideward turn of the eye, perhaps also in the modeling between the nostril and the angle of the mouth. The graceful head of Plate XXXII., 4, has the lips well parted, with a clear indication of the teeth, yet

[1] Further account will be given of this when dealing with this metope separately.

and working away of superfluous material. We detect its use only in those portions which are not meant to be seen.

In all visible portions we must be struck by the complete naturalness and truth in the rendering of pose and movement, and by the exquisite finish of the surface. In this the mechanical working of the material never obtrudes itself, and each minutest part is treated with a care and finish unequaled or, at all events, unsurpassed by any extant works. And this minute finish becomes the more remarkable when we remember that the figures in the metopes were only half life-size, and, placed as they were about thirty-eight feet from the ground, were hardly visible to the spectator in the details of their elaboration.

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it would be hard to fix upon any definite shade of emotion in it.[1] The same applies to the head of the warrior placed upon the torso of Plate XXX. The turn of the eyes with their downward gaze in the head of the Amazon (Plate XXXI., 3) would not help us far in appreciating an expression of pathos, if it were not for the actual downward and sideward droop of the head; for in the face itself there is but slight if any indication of emotion.

All this tells us simply that our sculptor still clung to the severer traditions of art maintained in the fifth century B. C., in which emotion was not yet freely expressed in the heads of Hellenic type, though the bodies rendered with perfect freedom every phase of life and action. To our knowledge the step towards more adequate expression of emotion in the heads was not made before the time of Scopas or towards the middle of the fourth century B. C.

If we compare these heads with each other we shall find, looking at them superficially, that they present a certain variety of type and that there are certain differences of detailed treatment. As regards the variety of type, we shall find that this may correspond to the variety of subject. For among the nine heads or fragments of heads three are heads of Greek youths, two of which have helmets (Plates XXX.; XXXI., 1, 2, 4), and these are distinctly of the same type, while the others are female heads, one of an Amazon, another probably of a helmeted goddess (Plates XXXI. 3; XXXII., XXXIII., 1, 2), another of a young girl, two others of maturer young women, and the last of a girl whose hair is being clutched. The difference is thus seen to be due to the difference of subject and action.

The same applies to the differences of detailed treatment: a head with a downward look is different in the treatment of the eyes from one with a straight or upward glance. So also as regards the position of the head as it follows the movement of the torso. Moreover, it must be remembered that all these heads, with one exception, were worked in relief, and were thus meant to be seen only from one point, be it in profile, full face, or three-quarter view; and that thus, among the comparatively small number of such heads (we roughly compute that there must have been in pediments and metopes at least 190 heads) which have come down to us, we are fortunate in having so large a number as three belonging to the same category.

There is thus a very slight divergence in the treatment of the eyes of one or two of these heads, and there is some difference and uncertainty in the treatment of the hair. If we compare the Parthenon metopes and frieze (unfortunately we have no head which we can assign to the pediments beyond all doubt) as regards the treatment of hair, we shall find fully as great a variety, — from a cap-like treatment to the finished modeling of locks and strands; so, also, in the pediments and metopes from the temple of Zeus at Olympia, even with regard to the heads coming from the same pediment. But it appears to me that in our marbles, and perhaps in those instances I have just quoted as well, the sculptor who has evolved a fixed style for the rendering of hair in monumental sculpture, in bronze or gold and ivory, may be still hesitating and searching for the proper manipulation in the rendering of such texture when he comes to marble sculpture which he uses in the decoration of great edifices. We must not forget that so far as the evidence, both literary and monumental, now at our disposal goes, we have no proof of the perfect working of marble in the minute indication of texture and all its inherent artistic qualities before the advent of Scopas and Praxiteles.

[1] The earliest instance of showing the teeth known to me is in the fallen giant from the metope of Selinus from the Third Temple, and in the fallen hero from the eastern pediment of the temple of Athena at Aegina.

In spite of this slight divergence, I confidently maintain that no one who is thoroughly familiar with a large series of heads in the different periods of Greek art, and has carefully observed and studied these sculptures from the Heraeum together, can fail to see that they definitely belong to the same school, and that they have in common marked characteristics which not only point to a common origin, but clearly distinguish them from the heads of other schools.[1]

To begin with, they all have the same structural frame, the same broad outline, the same formation of the skull. It can best be described as square and massive; and this applies to the profile as well as the full face. It is neither strongly oblong nor pear-shaped with a point at the chin on a triangular system, nor oval, nor round and ball-like.[2] The hair is in its main arrangement close fitting, not free and rich in its treatment as it rises from the head; but it seems almost slavishly to follow in its outline the main square shape of the skull. And this is so even in the case of the more profuse hair of the female heads. With the exception of the female head whose hair is grasped on the top, the hair, generally parted in the middle, is arranged in the same system of waves on either side of the central parting and covers the upper part of the ear. The forehead is thus left in a comparatively smooth arch-like curve. The brows are cut in the same simple arch with the same angle to the nose; both lids of the eyes are then cut in the same firm line with the same indication of the lacrimal gland. The nose is comparatively broad and thick, with a strong bridge slightly thickened in the middle and a broad rounded tip. The nostrils, too, though they do not project far in comparison to the breadth of the tip of the nose, are thick and well curved. The upper lip is well arched and clearly defined, in most cases slightly opened, giving something of a pouting expression to the mouth. Mr. Edward Robinson of the Boston Museum of Fine Arts has drawn my attention to a marked peculiarity in the treatment of the upper lip, which he has noticed in the heads hitherto ascribed to Polycleitus, and which is to be found in all these heads from the Heraeum. It consists in an upturning and widening out of the curves at either side of the central point, which accentuates the peculiar pouting expression. This expression is still more heightened by the hollow between the upper lip and the nose and the marked protrusion of the lower lip, with the short, deep hollow between it and the chin. There is thus a central mass of the lower lip, well defined in all these heads, which protrudes in its rounded curve, and this central protrusion is clearly divided from either side of the lower lip. From the curve under the lower lip the strong, rounded, but not over-long chin projects almost within a line of the foremost point of the lower lip. The cheeks present a broad, well-rounded surface, not approaching chubbiness, but, on the other hand, far from thin or tapering towards the chin. In the profile view the middle of the frontal bone above the nose, and the outer tip of the upper lip are about on the same line. The forehead, rising upward, inclines slightly inward, as, in a downward direction, the lower lip and chin slant inward. From this most prominent point of the frontal bone the nose projects outwards gradually. All these peculiarities these heads have in common.

[1] Since this was written I have endeavored to define the style of these heads in an attempt to identify the Argive Hera with a head in the British Museum. — *Journal of Hellenic Studies*, XXXI. (1901), pp. 30 ff.

[2] See the discussion on this point in my previous publication of one of these metope heads. *American Journal of Archaeology*, IX., 1895, p. 334 (*Papers of the American School at Athens*, VI. p. 252).

THE PERIOD AND SCHOOL OF THE HERAEUM MARBLES.

We must now solve the question, To what period and to what school may we assign these sculptures?

The general characteristics of art manifested in these works, as well as the details of style and workmanship, point towards the fifth century B. C. But if we compare these metopes from the Heraeum with the metopes from the Parthenon, we shall at once assign to the former a later date than to the latter. They undoubtedly mark a greater elaboration, more detailed modeling, more accentuated finish in the nude and in the drapery than the most advanced of the Parthenon marbles. As an outside limit in the other direction, I should put the fragments from the Tegean temple and of the Scopasian School, which certainly manifest a later development in the rendering of individuality and of emotion in the treatment of the heads. In their manifest outside limits they must thus have been produced between the years B. C. 438 and 360.

Positively we may compare them with the Phigalian marbles from the temple of Apollo at Bassae. But these are coarser in workmanship and in sentiment. The heads are rounder, more bullet-shaped, the movement more exaggerated, especially in the restlessly fluttering drapery, in the stretched folds of drapery drawn into parallel lines by the knees bent apart — a feature characteristic of these sculptures. The Heraeum marbles have the greatest analogy among extant works, as regards the treatment of the body and of drapery, with the beautiful reliefs from the Balustrade of the temple of Niké Apteros at Athens, and with the reliefs and pedimental figures from the temple of Asclepius at Epidaurus. Yet a minute examination will show that there is greater elaborateness and sensuousness, as well as complexity, in the treatment of drapery in the Athenian reliefs from the Balustrade, which appear to me distinctly less severe and, in so far, later in character. The Epidaurian sculpture, again, has a very close affinity in style; but especially when we take the Acroteria (Nereids and Flying Victories), it shows greater softness in the indication of the female figure and greater complexity and heaviness in the treatment of drapery than we find in our works, which are in so far of an earlier period, i. e. earlier than about 380 B. C. The difference between the sculptures from these two Argolic sites corresponds very much to the difference which I have noted[1] with regard to the *sima* from the Heraeum (see above, p. 124) and that from the Tholos at Epidaurus. A careful comparative examination of the *simas* of various Greek temples will show that the Heraeum *sima* is later than that of the Parthenon, and that of the temple of Apollo at Bassae; while it is distinctly earlier than those of the Epidaurian building, the Mausoleum of Halicarnassus, the second temple of the Ephesian Artemis, and the temple at Priene. The closest approximation to it is found in the ornamentation of the Erechtheum of Athens, but this shows signs of being a slightly later development of the pattern which is given on the *sima* of the Heraeum.[2]

[1] See my *Excavations*, etc., pp. 15 and 16.

[2] It would be impossible to exaggerate the importance of a careful comparative study of such architectural details, which I feel confident will bear the most fruitful results, when viewed in the light of the whole history of Greek art. In the present instance, a careful tabulation, followed by a conscientious analysis of the honeysuckle pattern as given on *simas* and cornices, in connection with the treatment of the lion's head serving as water-spout, will furnish a safer chronological foothold than many elaborate treatises of monuments and critical renderings of texts combined. I cannot in this instance develop the full import of such a comparison in all its details; but the mere outline of the comparison I made between these carvings in the buildings referred to in the text will illustrate my meaning. Compared with our *sima*, that of the Parthenon is simpler in design and line, while the lions' heads are less conventional. I do not mean by this that they have any of the realism which some belonging to later buildings (which often combine these elements of realism with more developed conventionalization in other features) have. The *sima* of the Phigalian temple is similar in arrangement to ours, but is on the whole harder and less developed. On the other hand, as I pointed out in the first publication in 1892, the Epidaurian *sima* is throughout more "barocco," a distinctly later development. In the Mausoleum of Halicarnassus, the lotos and honeysuckles alternating have a more conventional character, with a touch of Orientalism, while the lions' heads with the deeply sunk eyes are at once more realistic and yet have a more conventionalized pattern to the "whiskers." The lions' heads in the temple of Athene Polias at Priene are similar, but are generally coarsened in workmanship. Still further conventionalization is to be noted in the Nereid Monument from Xanthus, in which the lines about the jaw, etc., cover the whole nose and cheeks, and have become a mere decorative pattern. Perhaps earlier than these, the lions' heads from the Ephesian temple of Artemis confine these lines to a symmetrical arrangement up the nose; the eyeball is sunk in a deep-cut circular channel surrounding it, the two ridges on the forehead have become conventional channels. So, too, the beautiful scroll pattern on the *sima* is an advanced elaboration of that on ours with greater conventionalization. Each one of the volutes is elaborately grooved (where it is simple in ours) with foliage overlapping — blossom and twig are here confused and mingled with each other, as well as in the neck of columns. On the other hand, the patterns round the door and console of the Erechtheum are nearest to our own, only there is additional grooving in the twirling stem of the scroll pattern; the whole is later and more conventional. The similarity is still more striking if we can assign the fragment with the bird to this building. But one thing seems to me clear: that the Erechtheum ornament and that from the *sima* of the Heraeum are most closely related, and that of the two the Erechtheum is slightly later and marks one step further in the natural history of ornament.

As we shall see more clearly the further we proceed, there is every reason to accept a certain relationship between the Argive Heraeum and the Epidaurian works of art; only this relationship would mean that the Argive works influenced the construction of those at Epidaurus.[1] The younger Polycleitus, grandson of the great sculptor, was commissioned to produce the beautiful Tholos at Epidaurus, and from the proximity of the two places we might well expect an Argive influence there.[2]

As the architectural decorations have the clearest affinity with the Erechtheum of Athens, so the head of Hera has some points in common with the heads of the Caryatids from that temple. But as we shall see later, this resemblance, as far as it goes, makes it more likely that the type of head in the Caryatids was influenced by Argive art than that the reverse current of influence was in force in that period.[3]

All this internal evidence of the monuments themselves naturally leads us to fix the date of these sculptures, judging them merely from their style, in the second half of the fifth century B. C., later than the Parthenon and slightly earlier than the Erechtheum. And when, further, we have the definite statement that the temple was burned down in 423 B. C., and bear in mind that it must have been rebuilt at once, we are justified in assigning to these sculptures the date determined for the erection of the temple, that is 420 B. C. This date, moreover, is the one assigned by Pliny (*N. H.* XXXIV. 49) to Polycleitus, and has universally been admitted to refer to his making the statue of Hera for our temple. When, further, we remember that, at all events, the metopes had, for reasons of construction, to be put in their place before the building was completed, there can hardly be any further doubt respecting the date of these sculptures, a degree of certainty which is hardly equaled with regard to any other monuments that have come down to us from Ancient Hellas.[4]

[1] According to the inscription published by Cavvadias (*Fouilles d'Épidaure*, I. p. 23), and Foucart (*Bull. de Corresp. Hellén.* XIV. [1890], pp. 589–594), the models for the pediments were furnished by the artist Timotheus for the sum of 900 drachmae, inferior artists being engaged under him. This famous artist Timotheus we can follow in his successful career for many years in the fourth century B. C. We know that he collaborated with Scopas, Bryaxis, and Leochares at the decoration of the Mausoleum of Halicarnassus, but there is nothing to show to what school he belonged, whether Attic or Argive.

[2] We cannot even say that Thrasymedes, who made the gold and ivory statue of Asclepius in the Temple at Epidaurus, belonged to the Attic school. His former association with Phidias as his pupil rests merely upon the mistaken late statement of Athenagoras (177 A. D.) in his *Leg. pro Christ.* 14, p. 61.

[3] See below, p. 167.

[4] It might be said that the metopes were let in with rough marble projections to be worked in relief *in situ* at a later period, — there is absolutely no reason in favor of this very unlikely proceeding.

POLYCLEITUS AND THE HERAEUM MARBLES.

The date of these works thus being fixed, the next question is that of the school to which we must ascribe them. We shall see more clearly, the further we proceed, that there is every reason, internal and circumstantial, for assigning them to the Polycleitan school, and no valid reason against this.

In the first place, we must naturally assign to the leading sculptor of the place, who is charged with the creation of the great temple statue, the superintendence, if not the designing and elaboration, of the sculptured ornamentation of this very temple. The probabilities in favor of these temple ornamentations being representative of the art of Polycleitus are as great as, if not greater than, the probability that the Parthenon marbles are representative of the art of Phidias. For while we know that Phidias had a powerful opposition against him in the Athenian state which tended to limit or to interrupt or even to stop completely his work at Athens, we know of no such disturbing elements which curtailed and limited the dominating influence of the leading Argive artist in his home. If the local Argive artists were of inferior talent, or even second to some other leading artist in Hellas, we could understand why part of the great work should be assigned to a foreigner. But we find that at the time of the construction of the Heraeum, Polycleitus was *facile princeps*, that he stood unrivaled among the artists of the whole of Greece, and that he was at the head of a most flourishing school of sculpture, which for generations after, when this school passed on to Sicyon, made its influence felt upon all succeeding artists, so that even a Lysippus in the following century acknowledges this direct influence. When we consider these general facts, there is at least no *a priori* reason for assuming the advent of foreign sculptors to decorate the temple for which Polycleitus fashioned his famous statue of Hera.

I have just emphasized the unique position held by Polycleitus after the death of Phidias. But as a matter of fact, the prominent position of the Argive sculptor did not depend merely upon the absence of his great Athenian rival, the greatest of ancient sculptors. For subsequent generations, who had the works of all the great masters before them, assigned to Polycleitus a place which (though in our eyes it does not detract from the supreme genius of Phidias) secures for him the same general plane of excellence from which Phidias rose above his younger contemporary. We may ignore for the moment the passages containing the exalted praise of his great statue of Hera, as well as those concerning his peculiar artistic qualities, with which we shall deal later, and we still find that the representative judges of the ancient world couple his name with that of Phidias when they mention the greatest artists of antiquity; just as in modern music — and the analogy is tempting in many other respects — Mozart is coupled with Beethoven. Xenophon,[1] in speaking of the greatest artists, selects Homer to represent the epos, Melanippides the dithyramb, Sophocles tragedy, Zeuxis painting, and Polycleitus sculpture. Aristotle[2] and Dionysius of Halicarnassus[3] single out Phidias and Polycleitus, the latter placing Polycleitus first. Cicero chooses him by preference to illustrate the highest sculpture, and says of his works,[4] "They are more beautiful and, in fact, quite preferred." Quintilian, Statius, Juvenal, Lucian, and Aelian all adopt the same tone. Finally Pliny,[5] speaking of bronze work, says that Polycleitus developed this art to the highest point, and carried to perfection what Phidias had opened out.

[1] *Memorabilia*, I. 4. 3.
[2] *Eth. Nicom.* VI. 7.
[3] *De Dinarcho*, 7, and *De Isocrate*, 13, p. 541.
[4] *Brut.* 18. 70.
[5] *N. H.* XXXIV. 56.

Is it at all likely that the Argives who kept up the tradition of the Polycleitan school, of which they must have been proud, and allowed the grandson of Polycleitus, Naucydes, to make the statue of Hebe to stand beside Hera, is it likely, with this giant artist in their midst, with a thriving school (in which were his own sons and grandsons) spreading its ramifications to other great art centres in Greece, that they would have turned to other parts, even to Athens, for sculptors to decorate their great temple? And at what period would they be doing this?

This was a time when Phidias was dead, and with him Pericles, and a strong wave of Attic opposition was likely to counteract the vitality of the school of Phidias; when the Peloponnesian War was exhausting the wealth and checking the artistic advance of that centre of Greek taste; when, as a matter of fact, so far as undoubted evidence is concerned, we have a lacuna as regards great sculpture in Attica. At this very time the genius of Polycleitus and the vitality of his school reach their highest point. As Furtwängler puts it:[1] "The rise of Polycleitus in Argos marked no less an epoch than that of Phidias in Athens; the Doryphorus is as decided an advance on its predecessor as the Lemnia and the Parthenos on theirs."

Is it not more likely even that Argive artists of the Polycleitan school would be called to Athens than that Argives would call in inferior Attic artists, the two states being allies at the time? Are we not even more justified in expecting to find at this period the artistic influence of Argive sculpture at Athens than post-Phidian influence at Argos,[2] especially when we remember that such influence had become traditional from the time of Ageladas, that at an earlier period Polycleitus had vanquished Phidias with his statue of an Amazon, and that, in the Attic talk of even the period when Phidias was alive, the names of the two artists were familiarly coupled together, as is shown in Plato's Protagoras?[3] If, moreover, as I hope to be able to do, I can establish the identity of pattern on the diadem of the Hera from the Argive coin (admitted to be a reproduction of the famous Polycleitan statue) and on our *sima* from the temple in a most individual feature, I shall have gone far to show, by actually extant works, an immediate relation between the maker of the great statue, Polycleitus, and the marble-workers of the temple — *a fortiori* of the sculptors who carved the metopes and pediments.

When now we find that among the marbles from the metopes of this temple we have a head which is unmistakably Polycleitan, closely related to the head of the Doryphorus and to other heads rightly assigned to Polycleitus,[4] that the second of our six extant heads

[1] *Masterpieces of Greek Sculpture*, translated by Eugénie Sellers, 1895, p. 226.

[2] I shall have to point out, for instance, how the weight of probability goes to show that the Erechtheum Caryatid-type was influenced by a famous statue of Polycleitus.

[3] Of this passage (311 c) Furtwängler says (p. 225): "Plato is evidently citing the two most celebrated artists and leaders of the two schools most in renown at the time in which the dialogue is supposed to have taken place."

[4] Any intelligent comparison of our Argive head with that of the Doryphorus and the replicas of this statue will at once demonstrate this. The difference between the two in the treatment of the hair is on the one hand to be ascribed to the difference of the development in the treatment of hair in Polycleitan works from the Doryphorus to the Diadumenus, as well as to the difference of bronze and marble technique, — especially when we remember that our head formed part of a metope placed high up in a building and not of a statue on the eye-line. For this variation in the treatment of hair, as well as for its similarity to Polycleitan work, I would also ask for a comparison of our head with that in the possession of Sir Edgar Vincent (Furtwängler, fig. 103) and of the head in the Hermitage of St. Petersburg (*ibid.* fig. 104), which Furtwängler considers to be the best copy of an athlete by Polycleitus. He says of the hair: "The hair, though individual enough, is not worked with much detail. The style is distinctly Polycleitan; this is still more the case in a copy of the head in the Hermitage." I would further ask for a careful comparison between our head and that of the beautiful statue of a boy in Dresden as given by Furtwängler (*ibid.* fig. 112). It will then be seen how in the profile view the general arrangement of the hair round the ear and at the back of the head, though roughly blocked out in the metope head and carefully elaborated in the boy's statue, is essentially the same.

from these metopes, that of the Amazon, shows close relationship to the type of an Amazon head hitherto identified with Polycleitus, on what ground can we reasonably assign these sculptures from the Heraeum to any other school than to that of Polycleitus of Argos? I firmly maintain that we cannot.

Still this has been done. Furtwängler has rather hastily said (although he acknowledges, in a footnote, that he had not seen our finds):[1] "All these sculptures have not the least relation to Polycleitus and his school. . . . The head of Hera, as well as most of those pieces of sculpture from that place [Heraeum] known to me are certainly Attic."

I had intended to pass over this positive statement, together with other remarks by the same author, without further attention, believing that their somewhat dogmatic tone, as well as the inadequate and superficial habit and method of scientific observation of which they seem to give evidence, would prevent their having an influence on the thoughtful reader. But I find that he has repeated his assertions in the *Meisterwerke*,[2] a book that is widely read and contains much of extreme interest and value, although this is closely connected with some rather precipitate and apparently unwarranted views, which are unfortunately so expressed as to give the impression of being firmly established facts. As this work is widely known and often quoted, I feel that it would not be dealing justly by the treasures which a good fortune has put into our hands, if we were to allow their proper scientific appreciation to be perverted or even retarded.[3] I must therefore attempt a refutation of Professor Furtwängler's doubts as well as of his assertions, which will at the same time lead to a more detailed appreciation of the light which our discoveries throw upon Polycleitan art.

It is difficult to account for such opinions as those expressed by Professor Furtwängler, or to find adequate reasons for them. In studying his *Meisterwerke*, however, to learn the grounds upon which he rests his own conviction or opinion, I find that these views rest upon a general theory developed in an earlier portion of the book, into which he is naturally led to fit other facts as they arise. This general theory is that of the widespread influence of the artist Cresilas. On p. 243 of his *Meisterwerke* he says: "We may assume a certain amount of Attic influence in the later period of Polycleitus, and for this Cresilas may well have been the medium; for we know that he was working at Argos just at this time. And we must bear in mind that, as I have previously shown, the fragments of sculpture from the Heraeum of Argos are worked in a style in which Attic influence preponderated, and are decidedly akin to the figures on the Niké Balus-

[1] *Archaeologische Studien Heinrich Brunn Dargebracht*, April, 1893, pp. 89, 90.

[2] *Meisterwerke*, p. 223.

[3] I feel this the more, because of course the work which Professor Furtwängler has done entitles him to a very prominent position among archaeologists. If he seems to me to be lacking in the power of delicate artistic appreciation and to be overhasty in judging the relative value of evidence and the relative degrees of certainty, his apprehension of mechanical decorative detail and his memory for these important matters are astounding; not so, I believe, his appreciation of pure sculpture on the artistic side. Still, I fully recognize that his stupendous productivity, his intimate acquaintance with monuments and literature, assimilated into a phenomenal memory, together with an excellent perception and mastery of decorative forms and technical details in art, have enabled Professor Furtwängler to produce fundamental and enduring work such as we have in his great monographs on vases, gems, bronzes, and in the intelligent cataloguing of great collections. It is true Professor Furtwängler's view has, so far as I know, not been accepted by any authority. Collignon (*Hist. de la Sculpt. Grec.* 1897, p. 168) says: "M. Furtwängler la considère comme une oeuvre attique. Mais je crois que M. Waldstein a raison d'y voir une oeuvre de style Argien." Overbeck refers to the head in similar terms. E. A. Gardner (*Handbook of Gr. Sculp.* II. p. 341), while admitting the Argive origin of the Hera head, hesitates, and assumes an Attic influence, to be ascribed to the fact that Argive artists had come under the influence of Phidias. Tarbell hesitates in a similar manner (*Hist. of Greek Art*, pp. 211, 212).

trade at Athens, all of which seems to point to the probability that Attic artists were at work in Argos." In a footnote he adds: "The head lately found at the Heraeum which Waldstein considered to be Polycleitan is more likely Attic."

Now this Cresilas is the point upon which rests Professor Furtwängler's assertion of the transportation of Attic art into Argos. All we know of this artist with certainty is that he was not an Athenian, but a Cydonian, and that he most probably emigrated from his Cretan home into Greece. He certainly made a portrait of Pericles which is inscribed with his name,[1] the inscription having come down to us. A second inscription found on the Acropolis was dedicated by a certain Hermolycus, and dates back to about the middle of the fifth century.[2] A third, found in the same place,[3] is considerably later. A fourth inscription is on the base of an offering to Demeter Chthonia at Hermione[4] in Argolis. A companion inscription dedicated by the same man, Alexias's son, gives the name of an Argive artist.[5] To this Furtwängler adds: "Cresilas is thus shown engaged on work for a family of Hermione in company with an Argive artist; and the probability is that he was living at Argos at the time, and received the commission jointly with the native artist." In the last two inscriptions Cresilas calls himself a Cydonian. Upon these facts Professor Furtwängler builds up the life of this artist (p. 116): "Even from this view itself we can gather a good deal of information concerning the artist's life. Born at Cydonia in Crete, he must have left home early in order to cultivate his talents, for we know of no school of artists in Crete at that time. . . . It was of course only natural that the young artist should turn his steps to the brilliant and artistic Athens. Here he seems to have succeeded in working his way up among the first artists and in obtaining a great reputation, especially as a portrait sculptor. Otherwise he would certainly not have been intrusted with the bust of Pericles, the most distinguished and most powerful man in the city. . . . As to the migration of Cresilas to Argos, it was doubtless occasioned by the outbreak of the Peloponnesian War, which must have rendered residence in Athens unpleasant for an artist, especially if he was a foreigner," etc. Now it is this Cydonian artist who, Furtwängler maintains, brings Attic sculpture to Argos in the time of Polycleitus.

If we were so inclined, I believe we could more readily make a theory that this Cresilas, who worked jointly with an Argive artist, who was beaten by Polycleitus in the competition for the Amazon statue, who, as it were in imitation of the great artist, makes an Amazon and a Doryphorus, migrated from his Cretan home to Argos, and might thus be considered an Argive artist rather than an Athenian artist. But we should consider such an attempt frivolous.

There are other more definite grounds upon which Furtwängler bases his assertion that our Argive sculptures are Attic in style. These are to be found in a comparison he establishes[6] between our life-size head of Hera and a small marble head of a boy (83 mm. in height) which came from Brauron, and which, I am told, is in his private possession (Fig. 84). To this head he assigns the date of *circa* B. C. 420. On a former occasion[7] Professor Furtwängler brought this little head into direct relation with the Olympian sculptures, and pointed to the similar treatment of the hair in the old man of the eastern pediment and the treatment of the eyes in Olympian pedimental heads.[8] These state-

[1] Δελτίον Ἀρχαιολ. 1889, p. 36.

[2] Loewy, *Inschr. G. Bildh.* No. 46.

[3] Loewy, *ibid.* No. 47.

[4] Loewy, *ibid.* No. 45.

[5] Loewy, *ibid.* No. 51.

[6] *Archaeologische Studien*, etc. p. 89, pl. iii.

[7] *Athen. Mittheil.* V. (1880), p. 45.

[8] "Die Haare sind behandelt wie z. B. an dem alten

ments he now retracts, and maintains that "the nearest parallel to my small 'Attic' head is the newly discovered beautiful head from the Heraeum of Argos, belonging to the same date. This head is that of a girl who, however, like our boy, *has a braid at the parting in front* [the italics are all mine]; behind the band, however, this braid is not continued. *One of the Korai* of the Erechtheum, also of the same date, has quite a



FIG. 84. — SMALL MARBLE HEAD FROM BRAURON.
In the possession of Professor Furtwängler.

similar braid at the parting. *Also the strongly waving hair is analogous in the heads compared.* With the head from the Heraeum our small head is furthermore *specially connected through the cut of the eyes, the formation of the eyelids, and the lacrimal glands* (Thränenkarunkel), *furthermore through the supreme sweetness of the mouth and the flat dimple of the chin.*"[1] For every point of similarity which is here supposed to establish a direct connection between these two heads we might almost put contrast or marked difference, and I would ask the reader to compare the cuts here given with our PLATES (FRONTISPIECE and XXXVI.).

1. The general build and outline are quite different. The upper part of the Brauron head, when taken in full face, is broader throughout, and maintains this breadth across the cheek. It thus follows a round, and not a square or rectangular principle. In the profile view, the top of the head rises more from front to back; its highest point is not in the middle, but more towards the back; while the whole outline of the face, with the receding forehead and the receding lower lip, the comparatively great breadth and flatter surface of the cheek between nostril and ear, give to this head a remarkably different character from that of our Hera.

2. The "strongly-waving" hair is dealt with in so peculiarly delicate and almost washed-out a manner that it stands in strong contrast to the well-cut waves of hair in the Hera, as well as in the Caryatids from the Erechtheum. It is no doubt this peculiar quality of long, roundly cut waves which led Furtwängler to make the comparison (justified in this point) between his head and some of those from Olympia. A further comparison of the Brauronian head and its hair with that of the youthful Triptolemus from the famous

Manne vom Ostgiebel; die Augen ferner und das etwas hervortretende Untergesicht sind widerum jenen Sculpturen direct verwandt." Would he thus also consider our Hera *direct verwandt* with the pedimental heads from Olympia as regards eyes and the lower face?

[1] "Seine nächste Parallele ist der neugefundene eben um diese Zeit [B. C. 420] datierbare schöne Kopf vom Heraion bei Argos. Dieser stellt ein junges Mädchen dar, das aber wie unser Knabe vorne auf dem Scheitel einen Zopf hat; hinter der Binde setzt sich dieser indess nicht fort. Einen ganz gleichartigen Scheitelzopf hat eine der Korai des Erechtheions, die um dieselbe Zeit zu datieren sind. Auch die stark wellige Behandlung der Haare ist an den verglichenen Skulpturen analog. Mit dem Kopf vom Heraion ist der unsrige noch besonders durch den Schnitt der Augen, die Bildung der Lider und der Thränenkarunkel, ferner durch den überaus lieblichen Mund und das flache Kinngrübchen verbunden."

Eleusinian relief might be instructive and profitable. But in modeling there is no analogy to the hair of our Argive head.

3. The outline of the receding, more wavy forehead in the Brauronian head, with its straight line about the braid, differs essentially from the simple circular sweep of forehead in the Hera.

4. And as for the "cut of the eyes, the formation of the eyelids, and the lacrimal glands," they are distinctly different. The orb of the eye itself is flatter and more almond-shaped in the Brauronian head. This is especially due to the different treatment of the upper lid. In the Brauronian head the curve is very slight and flat, ⌒ while in ours it has a bold circular sweep ⌒. This alters, not only the whole aspect of the lid, but the whole expression of the eye and face, which becomes more dreamy in the Brauronian head. The "Thränenkarunkel" is larger and more prominent in the Argive head.

5. The "supremely sweet" mouth, besides being closed in the Brauronian head, is much smaller, the projecting upper lip having more of an arch-like curve; while the lower lip has not the characteristic narrowly defined thickening which is so notable a feature in all these Argive heads.

The one point of similarity between the two heads is the "braid," which runs from the forehead to the back of the Brauronian head, and is not continued behind the band in ours. No doubt it was this vague and trifling similarity of one detail which led Professor Furtwängler to make what I must call superficial observation and to draw such a hasty conclusion. The analogy in this arrangement of the hair is much closer between our head and the maiden from the Erechtheum; and no doubt this obvious similarity again has led others to observe an Attic character in the Argive head. But though this peculiar arrangement of the hair is the same, the Caryatid, with the long curls on either side, shows a more mechanical and wooden treatment in this central braid, coming straight to the forehead, while in ours the waves of hair part symmetrically and yet organically beneath and beside it. It looks almost as if the sculptor of the Caryatid (Fig. 85) had not fully understood the natural arrangement as given in our head. In spite of the similarity of arrangement between these heads, a glance at the rounded forms in forehead and cheeks, the more fleshy treatment of the Attic work, compared with the spare, sharply cut outline of our Argive work, will well illustrate the difference of style in spite of the similarities.



FIG. 85. — HEAD OF ONE OF THE KORAI FROM THE ERECHTHEUM.

If there be any connection between these two works as regards the type or subject represented, is it not more rational, in view of the general state of sculpture in that period, to which we have referred above, to assume a Polycleitan influence in Athens, rather than a dependence of Argive sculpture upon Attica? And does not this become still more pressing in this definite case, when we find that world-famous works by Polycleitus were two Canephorae holding a sacred vessel on their heads "according to Attic custom"?

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Fig. 84. — Small Marble Head from Brauron.
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Fig. 85. — Head of one of the Korai from the Erechtheum.

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Cicero[1] praises them for their supreme grace (*eximia venustate*), while Symmachus[2] mentions them, together with the Zeus of Phidias and the famous cow of Myron, as the most famous works of art in existence. If Polycleitus, whose fame was established long before the Erechtheum was built, created a type of maiden carrying some object on her head, a work of world-wide fame, is it not more likely that the inferior Attic sculptor who fashioned these maidens for the Erechtheum should be influenced by such a type than that the Argive sculptor should borrow his type from the later Erechtheum?



Fig. 86. — Head of the Doryphorus. Ancient marble copy of the statue now in the Museum of Naples.

If there was such Polycleitan influence in Attic works of the second half of the fifth century, there might certainly also have been, and there most probably was, a certain Attic influence in Argive work. Even so great an artist as Polycleitus could not fail to be affected by the technical advance made by Phidias and the great sweep of his artistic genius. We can thus trace the influence of the technical progress made by the Van Eycks in oil-painting through Antonello da Messina in nearly all the great Italian masters; the artistic spirit of a Dürer even is modified by his travels in Italy; even a Giorgione and a Titian are not to be wholly explained by the specifically Venetian current of artistic growth; Raphael is affected by Michael Angelo; Francia, even at an advanced age, by Raphael; Mabuse the Fleming by Italian art; Rubens expands his genius after his stay in Italy and Spain; so Van Dyck and so many others. But these alien influences do not extirpate or hide the strong original and native "style" if it ever was the direct expression of a marked and vital artistic personality.

So, too, while recognizing the strongly surviving "Doryphorus" element in the youths' heads from our metopes, we see certain changes from the severer bronze technique as manifested in the head of the Polycleitan Doryphorus (Fig. 86), especially in the treatment of the hair. This is no doubt due, in the first instance, to the change in material, and consequently in technique, from bronze to marble. Polycleitus, moreover, was chiefly noted as a bronze-worker, while Phidias (though his chief works are *caelaturae*) was more proficient in actual carving.[3] But this must never lead us to believe that the great sculptor and his thriving school were restricted in their work to the one material, bronze, and could not extend their activity to the plastic decoration of the great temple in which they were working, especially when we know that his Zeus

[1] Cicero, *In Verr.* IV. 3. 5. Erant aenea praeterea [in the collection of Heius] duo signa, non maxima, verum eximia venustate, virginali habitu atque vestitu, quae manibus sublatis sacra quaedam more Atheniensium virginum reposita in capitibus sustinebant, canephorae ipsae vocabantur. Sed earum artificem? Quemnam? Recte admones, Polycletum esse dicebant.

[2] Symmachus, *Epist.* I. 23: Tune, inquies, audeas de philosophis iudicare? Licet alienas spectare virtutes: nam et Phidiae Olympium Iovem et Myronis buculum et Polycleti canephoras rudis ejus artis hominum pars magna mirata est.

[3] Dionys. Halicarn. *de Dinarcho* 7: . . . καὶ πλάσται τὰ Πολυκλείτου καὶ γλυφεῖς τὰ Φειδίου.

Aristot. *Eth. Nicom.* VI. 7.: . . . οἷον Φειδίαν λιθουργὸν σοφὸν καὶ Πολύκλειτον ἀνδριαντοποιόν.

Meilichius[1] was a marble statue. No actual marble statue is ascribed to Phidias. Moreover, his very excellence as a πλάστης, as a modeler, would make Polycleitus best fitted to make the wax or plastic models, τύποι, for the architectural compositions such as the Epidaurian inscriptions tell us were made by Theotimus for that neighboring temple, the figures to be carried out in marble by his colleagues and pupils.

Furthermore, these deviations from the treatment of hair in the Doryphorus type are to be ascribed to the peculiar constructive purpose which these heads, as metope heads, served in the architectural scheme of the temple. Small heads seen at such a height in the building by the spectator below could not receive the same delicate, almost engraved, work in the modeling of the hair as is given to the Doryphorus heads seen on the eye-line; and thus they required the bolder and more massive subdivision of locks, which is found in ours. We know from the study of the Parthenon marbles how carefully these conditions of distance, lighting, and peculiar position of the works in their relation to the spectator were considered by the sculptor.[2]

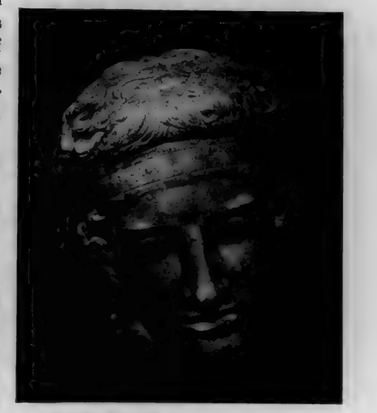


Fig. 87. — Head of the Diadumenus. Ancient marble copy, now in Dresden.

Finally, we must not forget the natural development and advance of the sculptor himself in his acquisition of greater breadth and freedom. On this point I have been ably anticipated by Professor Furtwängler,[3] who, in discussing the development of Polycleitan art, arrives at a conclusion which I had reached independently, and which our finds strikingly confirm; namely, that we can distinguish an earlier, severer, and a later, freer style in the master's work on his Doryphorus and on his Diadumenus. This is clearly noticeable when we compare the heads of these two statues with each other and then perceive the advance in modeling and general freedom of composition and execution in the Diadumenus (Fig. 87).[4]

With a very slight turn to the side, the head of the Doryphorus is placed almost upright and at right angles to the chest in the simple and severe manner of earlier art. Now, a marked feature is the "build of the skull" (*Schädelbau*), which is square in its outline. The hair is laid over the square structure at an even height, never projecting strongly so as to interfere with the marked suggestion of the construction of

[1] Pausan. II. 20. 1: Διὸς Μειλιχίου, λίθου λευκοῦ, Πολυκλείτου δὲ ἔργον. This work is ascribed by some to the younger Polycleitus.

[2] See Waldstein, *Essays on the Art of Pheidias*, p. 79, note 1; pp. 201 ff.; note D, pp. 227 ff.

[3] *Masterpieces*, pp. 243 ff.

[4] Before our finds at the Heraeum led me to reconsider carefully the extant monuments and records concerning Polycleitus, I was wont to explain the difference of phraseology applied to the two works by Pliny (*N. H.* XXXIV. 55), *fecit molliter iuvenem*, for the Diadumenus, and *viriliter puerum*, for the Doryphorus, as devoid of any purpose of special characterization or distinction between the two works, but simply as arising out of a literary desire of the author to give variety of style. Pliny, or the writer from whom he copied, I thought, desired to avoid the repetition of the same phrase, and thus chose terms which in a different form expressed the same fact. The technical distinction in ancient Greece marked by the ephebic age was conveyed by the technical meaning of *juvenis* and *puer*; and thus the *molliter* drew down the *juvenis*, as the *viriliter* drew up the *puer* to the same point of age between youth and manhood. Though such a literary desire may still have been active, I now think that the two terms do qualify and actually distinguish the two different works.

Cicero[1] praises them for their supreme grace (*eximia venustate*), while Symmachus[2] mentions them, together with the Zeus of Phidias and the famous cow of Myron, as the most famous works of art in existence. If Polycleitus, whose fame was established long before the Erechtheum was built, created a type of maiden carrying some object on her head, a work of world-wide fame, is it not more likely that the inferior Attic sculptor who fashioned these maidens for the Erechtheum should be influenced by such a type than that the Argive sculptor should borrow his type from the later Erechtheum?



Fig. 86. — Head of the Doryphorus. Ancient marble copy of the statue now in the Museum of Naples.

If there was such Polycleitan influence in Attic works of the second half of the fifth century, there might certainly also have been, and there most probably was, a certain Attic influence in Argive work. Even so great an artist as Polycleitus could not fail to be affected by the technical advance made by Phidias and the great sweep of his artistic genius. We can thus trace the influence of the technical progress made by the Van Eycks in oil-painting through Antonello da Messina in nearly all the great Italian masters; the artistic spirit of a Dürer even is modified by his travels in Italy; even a Giorgione and a Titian are not to be wholly explained by the specifically Venetian current of artistic growth; Raphael is affected by Michael Angelo; Francia, even at an advanced age, by Raphael; Mabuse the Fleming by Italian art; Rubens expands his genius after his stay in Italy and Spain; so Van Dyck and so many others. But these alien influences do not extirpate or hide the strong original and native "style" if it ever was the direct expression of a marked and vital artistic personality.

So, too, while recognizing the strongly surviving "Doryphorus" element in the youths' heads from our metopes, we see certain changes from the severer bronze technique as manifested in the head of the Polycleitan Doryphorus (Fig. 86), especially in the treatment of the hair. This is no doubt due, in the first instance, to the change in material, and consequently in technique, from bronze to marble. Polycleitus, moreover, was chiefly noted as a bronze-worker, while Phidias (though his chief works are *caelaturae*) was more proficient in actual carving.[3] But this must never lead us to believe that the great sculptor and his thriving school were restricted in their work to the one material, bronze, and could not extend their activity to the plastic decoration of the great temple in which they were working, especially when we know that his Zeus

[1] Cicero, *In Verr.* IV. 3. 5. Erant aenea praeterea [in the collection of Heius] duo signa, non maxima, verum eximia venustate, virginali habitu atque vestitu, quae manibus sublatis sacra quaedam more Atheniensium virginum reposita in capitibus sustinebant, canephorae ipsae vocabantur. Sed earum artificem? Quemnam? Recto admones, Polycletum esse dicebant.

[2] Symmachus, *Epist.* I. 23: Tune, inquies, audeas de philosophis iudicare? Licet alienas spectare virtutes: nam et Phidiae Olympium Iovem et Myronis bucolum et Polycleti canephoras rudis ejus artis hominum pars magna mirata est.

[3] Dionys. Halicarn. *de Dinarcho* 7: . . . καὶ πλάσται τὰ Πολυκλείτου καὶ γλυφεῖς τὰ Φειδίου.

Aristot. *Eth. Nicom.* VI. 7.: . . . οἷον Φειδίας λιθουργὸν σοφὸν καὶ Πολύκλειτον ἀνδριαντοποιόν.

Meilichius[1] was a marble statue. No actual marble statue is ascribed to Phidias. Moreover, his very excellence as a πλάστης, as a modeler, would make Polycleitus best fitted to make the wax or plastic models, τύποι, for the architectural compositions such as the Epidaurian inscriptions tell us were made by Theotimus for that neighboring temple, the figures to be carried out in marble by his colleagues and pupils.

Furthermore, these deviations from the treatment of hair in the Doryphorus type are to be ascribed to the peculiar constructive purpose which these heads, as metope heads, served in the architectural scheme of the temple. Small heads seen at such a height in the building by the spectator below could not receive the same delicate, almost engraved, work in the modeling of the hair as is given to the Doryphorus heads seen on the eye-line; and thus they required the bolder and more massive subdivision of locks, which is found in ours. We know from the study of the Parthenon marbles how carefully these conditions of distance, lighting, and peculiar position of the works in their relation to the spectator were considered by the sculptor.[2]



Fig. 87. — Head of the Diadumenus. Ancient marble copy, now in Dresden.

Finally, we must not forget the natural development and advance of the sculptor himself in his acquisition of greater breadth and freedom. On this point I have been ably anticipated by Professor Furtwängler,[3] who, in discussing the development of Polycleitan art, arrives at a conclusion which I had reached independently, and which our finds strikingly confirm; namely, that we can distinguish an earlier, severer, and a later, freer style in the master's work on his Doryphorus and on his Diadumenus. This is clearly noticeable when we compare the heads of these two statues with each other and then perceive the advance in modeling and general freedom of composition and execution in the Diadumenus (Fig. 87).[4]

With a very slight turn to the side, the head of the Doryphorus is placed almost upright and at right angles to the chest in the simple and severe manner of earlier art. Now, a marked feature is the "build of the skull" (*Schädelbau*), which is square in its outline. The hair is laid over the square structure at an even height, never projecting strongly so as to interfere with the marked suggestion of the construction of

[1] Pausan. II. 20. 1: Διὸς Μειλιχίου, λίθου λευκοῦ, Πολυκλείτου δὲ ἔργον. This work is ascribed by some to the younger Polycleitus.

[2] See Waldstein, *Essays on the Art of Pheidias*, p. 79, note 1; pp. 201 ff.; note D, pp. 227 ff.

[3] *Masterpieces*, pp. 243 ff.

[4] Before our finds at the Heraeum led me to reconsider carefully the extant monuments and records concerning Polycleitus, I was wont to explain the difference of phraseology applied to the two works by Pliny (*N. H.* XXXIV. 55), *fecit molliter juvenem*, for the Diadumenus, and *viriliter puerum*, for the Doryphorus, as devoid of any purpose of special characterization or distinction between the two works, but simply as arising out of a literary desire of the author to give variety of style. Pliny, or the writer from whom he copied, I thought, desired to avoid the repetition of the same phrase, and thus chose terms which in a different form expressed the same fact. The technical distinction in ancient Greece marked by the ephebic age was conveyed by the technical meaning of *juvenis* and *puer*; and thus the *molliter* drew down the *juvenis*, as the *viriliter* drew up the *puer* to the same point of age between youth and manhood. Though such a literary desire may still have been active, I now think that the two terms do qualify and actually distinguish the two different works.

the skull, and is then worked in graceful variety in the locks, engraved into this uniform mass rather than modeled upon or chiseled out of it. All is kept in restraint and reserve by a prevailing sense of symmetry, which, with all the variety of line in the hair, giving freedom and vitality and removing any suggestion of archaic conventionality, still casts a touch of severity over the life and vigor of this art. In nearly all Polycleitan heads this symmetry manifests itself in a characteristic manner in the treatment of the locks in the middle of the forehead, where they form a distinct archer's bow. So the Doryphorus.

If now we turn to the Diadumenus, we find a marked advance. This is found especially in the head, but also in the bodies of the numerous replicas[1] of this once famous statue, which were valued at the high price of one hundred talents in ancient days.

As regards the body, there can be no doubt that these copies of the Diadumenus present in general build and construction, as well as in attitude, the same type as that of the Doryphorus. But the treatment of the surface, the indication of muscles and articulation, the delicate transitions are more advanced,[2] and herein they approach more nearly to the modeling of the torso from our metopes. This is still more the case with the beautiful small terra-cotta figure now in the possession of Mr. C. Blacker in London,[3] though we dare not attach too much importance to statuettes for comparison with life-size figures as regards details. Of course the greater elaboration and greater delicacy and naturalness of modeling may in these copies be due to the relative skill of the copyist; but especially in view of the changes in the head and the modeling of the hair, the variations in the modeling of the body are more likely to be due to the difference in the bronze original.

The heads again are practically the same in general structure and form. The marked shape of the skull is the same, though with the different treatment of the hair the superficial appearance of the outline may be somewhat altered. The features, nose, mouth, eyes, cheeks, and chin, are of the same characteristic, somewhat heavy quality. On the other hand, as in the body, greater delicacy, more sentiment, are given by the changed position of the head, which, compared with the almost upright and straight position of the head in the Doryphorus, is here more turned to the side and drooping, though far from the more sentimental attitudes observed in fourth-century works.

But the great change takes place in the hair. No doubt the advance marked in the modeling of the hair is amply explained by the progress made in the art of modeling by the artist himself, with his practice and experience, as well as the observation of the work of other masters, within a period of, say, twenty-five years. But the first real cause in the change is to be found, as I have so frequently pointed out in other spheres of Greek art, simply in the constructive conditions of the work, in the peculiar and individual subject dealt with. In this case it means that the Doryphorus had no *taenia* or band wound tightly round his head and hair; while in the Diadumenus this forms the central and most important part of the action or situation depicted. Thus in the Doryphorus the artist could naturally maintain with greater strictness his characteristic insistence upon the square shape of the skull, even while skillfully indicating the texture of hair in his delicate *ciselé* modeling of each lock. He could also continue his severer, traditional system of bronze modeling of hair by means of careful engraved work, in contradistinction to bold modeling of masses, — a feature which was handed on from the bronze technique which prevailed in the archaic period. But when once the tying of a broad band round the head became, not merely a casual accessory, but the central function in the statue he fashioned, the effect of such a tight band drawn over the pliant texture of hair had to arrest his attention and call forth his artistic skill in modeling, now concentrated upon the changed character of the hair. The square outline of the skull could no longer be so rigidly preserved, and the even, cap-like treatment of the whole mass of hair, with its delicate surface-modeling and engraving, had to make way for a much freer and radically different treatment. This hair had to rise out at the edge of the tight band flatly compressing the locks under it to the skull, in higher relief; locks were disturbed in the regular arrangement; one stood out higher than the other; the direction of its curve was altered, and some had to project over the band.

This is exactly the change which takes place in the hair of the Diadumenus. While maintaining in some points its relationship, its "consanguinity," to the hair of the Doryphorus, it rises out boldly over the fillet in a large plastic mass of locks, and escapes beneath it. It produces a varied tangle of locks projecting beneath it at the back of the ear, as well as above and in front of the ear over the temples — in fact, over the eye. Now these changes are essentially the same in all the best replicas, the Dresden, the Cassel, the Madrid, the Delos — in fact, all Diadumenus heads.

Though the artist followed this "constructive" impulse, dictated by the subject he dealt with, the vigor and freshness of this new modeling of hair, when once he had mastered it, mark an advance over the restrained and severe methods guiding him when he made the Doryphorus, which is so pronounced that our appreciation of the art of Polycleitus, as based upon the one head, must be essentially modified when we include the other. Yet the various fine replicas differ from one another in the actual elaboration of this same general system, — especially in the manner in which the copyist was able to reproduce, not so much the freely modeled, almost undercut, masses of projecting locks, as in the manner of transferring to marble the peculiar crisp and firm finish of the bronze locks in the original and the survival of careful "engraved" work in the indication of texture on the surface of each lock.

In this respect I should place highest the head in the British Museum and the one I saw at Athens, as I can clearly remember this characteristic treatment.[1] The bronze treatment of the locks must here be much nearer the original than is the case in any of the other replicas. Mr. A. S. Murray recognizes that *la présence des charactères qui rappellent la sculpture en bronze paraît attester la fidélité de la replique*.[2] There is

[1] Besides the Vaison statue, so frequently reproduced, replicas of the Diadumenus have been published by: Michaelis, *Annali del' Inst. Arch.* Rome, 1878, pp. 1, seq., *Monumenti*, pl. x.; E. Petersen, *Bullet. della Comm. Arch. Communale*, Rome, 1890, pp. 185 ff.; Furtwängler, *Masterpieces*, etc., pp. 238 ff., where the previous and other replicas are considered. Since Furtwängler's publication, the following replicas have been published: Murray, *Revue Archéol.* XXVII. (1895), pp. 143 ff. pls. xi., xii., a head in the British Museum; Couve, *Monuments et Mémoires*, 1895, vol. III. pls. xii. and xiii.; the beautifully preserved copy found in a house at Delos by the French, a better reproduction of the Madrid statue, with body and head; Paris, *Monum. et Mém.*, 1897, vol. IV. p. 62, pls. i., ii.; *Bullet. de Corresp. Hellén.* 1895. Another, perhaps the most interesting of all replicas of the head, I saw two or three years ago in the possession of a dealer in Athens, but cannot trace it to-day. (See *infra*, p. 171, note 1.)

[2] Cf. Furtwängler, *Masterpieces*, p. 242; Couve, *l. c.*

[3] A. S. Murray, *Journal of Hellen. Stud.*, 1885, pl. 61. The body of this statuette shows greater slimness and delicacy than the other replicas, — though the Madrid copy is an advance in this respect upon the copy from Delos, and still more upon that at Vaison, — and is thus nearer to the torso from our metopes. But too much importance must not be given to so small a replica.

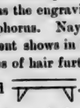
[1] I have thought it right to leave the text of my manuscript standing as I wrote it, and to add this footnote just as we are going to press, for it appears to me a striking confirmation of the facts I here enumerate that I should have heard by accident, within the last few days, that the head now in the British Museum and the one I saw at Athens are — the same head.

[2] *Revue Archéolog.* XXVII. (1895), p. 143. Recognizing this truthfulness of the copy in its relation to the original, Mr. Murray proceeds: "Mais ces charactères

another curious feature in the British Museum copy which I distinctly remember in the head I saw at Athens; namely, a slight puffiness, or rise of the skin in the infra-ocular

mêmes ne seraient-ils pas dus à une certaine affectation? Un tel luxe de fantaisie dans les détails ne dépasse-t-il pas même la portée de l'éloge de Quintilien, diligentia ac decor? A mes yeux, la difficulté se présente dans les termes suivants. L'exubérance, la liberté et la beauté des cheveux sont, d'une part, en si parfaite harmonie avec le visage, qu'elles impliquent une conception non alterée; d'autre part je ne puis trouver de preuve, même chez Quintilien, que Polyclète ait atteint, dans le traitement des détails, cette singulière richesse de fantaisie, au lieu de la large simplicité que l'on attendrait de son style et de son temps. En somme je considère comme certain que la nouvelle tête appartient à une période très postérieure à Polyclète; cela est suffisamment attesté rien que par le traitement de l'oreille droite et de la boucle de cheveux devant l'oreille. Ces détails présentent tous les caractères de l'art grec postérieure au V^e^ siècle." I can sympathize with Mr. Murray's difficulty, the more so as (vid. *infra*) I formerly held the same general conception of the art of Polycleitus, based upon the insufficient monumental evidence formerly at our command, and the consequent incomplete appreciation of all the passages in ancient authors relating to that sculptor. If Mr. Murray feels that the head contains a too careful elaboration of details in the hair, why should he stop short at the well-known passage from Quintilian concerning *diligentia ac decor?* Why not, for instance, take note of what Cicero (*de Orat.* II. 16. 70) says of the rendering of the lion-skin and of the hydra, or what Plutarch (*de Profectib. in Virt.* 17) lets Polycleitus himself say concerning the complete finish of modeling, — and then reconsider what Quintilian means by *diligentia ac decor?* His difficulty is that, on the one hand, he is forced to admit that the careful and free working of the hair is of a piece with the whole, and is therefore to be traced back to the original (though something, however little, will have to be ascribed to the transference from bronze to marble by a later copyist), while, on the other hand, there is for him too much delicate detail work for the severe Polycleitus and his age. Now, if the artist of the Doryphorus normally advanced from the stage marked by his earlier work, and, owing to this natural progress and to special reasons in the making of a youth binding a fillet round his head, advanced in the freer rendering of the texture of hair, would he not abandon the flat relief work as well as the severer symmetry? Would not this treatment of hair with its careful, crisp modeling of single locks be the natural result? So much for the style of Polycleitus. And as to "his age," I must ask Mr. Murray what fully authenticated head of the fifth century, from a statue, an ἄγαλμα, we have upon which to found his denial? Take the head of the beautiful charioteer recently discovered at Delphi (Homolle, *Monum. et Mém.* IV. 1898, pls. xv. and xvi.), and consider the treatment of the hair in this statue, especially in the treatment of the "ear and of the locks of hair in front of the ear," not to mention the singular indication of whiskers. Yet I doubt whether anybody will place this head *less* than forty or fifty years before the year B. C. 420. Moreover, these locks before the ear recur in all the other replicas of the Diadumenus head. When Mr. Murray considers all these facts, I believe he will not refuse our congratulations on his having under his charge in many respects the finest of the Polycleitan Diadumenus heads.

I subjoin some notes taken before this head chiefly in view of a comparison with our head of the youth from the metopes of the Heraeum: —

Generally softer and more detail than in our head, but coarser workmanship of actual carving excepting in hair. Head slightly rounder and broader in cheeks, shortened in proportion. The eye is similar to that of our metope head, the iris somewhat oblique, showing a downward look. Probably colored indication of iris, as in ours. The upper eyelid overlaps slightly at angle, a sharp short sunk line where upper lid fits into brow. Marked lacrimal gland. Short upper lip, slightly opened mouth. Lips do not come sharply to a point at angles, but the "laughing" muscle bulges out slightly. Nose and lips are much damaged, but the nose clearly the same broad, thick character as in ours. Hair: the band seems sunk more into curly hair, which gives way and spreads over it, than in other Diadumenus heads. Curls well defined on (its) right side of head. Bulge out strongly towards back on that side. They are real curls worked in careful bronze technique. Here an interesting point: While on the top of the head and on sides we have really modeled locks, separately modeled in relief, the flat Doryphorus type of hair has survived in other parts. So in front, under the curls there remains the engraving technique of regular parting of the Doryphorus. Nay, this characteristic symmetrical arrangement shows in the curious survival of two tusk-like meshes of hair further towards the side showing under the band  . We also have the same lock at the side of the ear in front. Behind and above his right ear the band, which was crossed over behind, was pulled out and held in his upraised hand. At back on the right side there is a curious grooving work, where the band might have been. This must have been like drill-work at the back of our metope heads, though now corroded away.

When the light falls from above we can detect a soft rising or puffing under lower lid at the infra-ocular depression, which I remarked in a clearer manner in the Athens head. Also note slight "bronze" *appliqué* ridge or sharp edge over left eyebrow as in earlier bronzes.

As far as the face, from the brow downwards, goes, our metope head is nearest to this. The hair in ours is in rougher masses and less defined, but locks by the ear same in their general arrangement.

Let me finally add that when Mr. Murray notes the pouting expression of the British Museum head, and considers that this 'air morose' does not suit a victor, he points to a characteristic feature which *all* the Polycleitan heads, from the Doryphorus downward, have in common. It arises chiefly out of the peculiar treatment of the lower lip, which can be seen in all our heads, in conjunction with the generally heavy treatment of the nose and other features. It is another strong point showing that all these heads, including our Heraeum heads, are of the same school.

[1] See account of the head at end of previous footnote.

[2] *Meisterwerke*, p. 442.

[3] In the British Museum. This copy has long been recognized as inadequate and as being worked over in the head. It appears to me as if there had not been sufficient marble on the left side of the head, or that some accident had forced the copyist into greater flatness here.

depression under the left eye of the head,[1] a degree of "literalness" in detail modeling which is paralleled by the curious rise in the groin of our torso from the Heraeum metope. And this work cannot be placed later than 420 B. C.

The result of any careful comparison of these heads shows that the Doryphorus, as well as the Diadumenus, is clearly Polycleitan; and that the Diadumenus marks a distinct advance in freedom and delicacy of modeling over the Doryphorus. Furtwängler,[2] while assigning to the Doryphorus and the Amazon the date B. C. 440, thinks that the Diadumenus should probably be assigned to the same later period of the artist's career as the Hera (B. C. 420). "I think," he says, "I am not mistaken in finding certain kinship with the coin of Hera." Without attempting to assign any precise date, all that we are prepared to state is that the Diadumenus presents the master's latest style; that all these heads of the Diadumenus are of the same general character as the head of our youth from the Heraeum metopes, and that some of them invite interesting comparisons with our larger female head, which we have called Hera, and that it was the revelation of finish and delicate modeling in our torso from the metopes which enabled me to appreciate these qualities in the heads of the Diadumenus.

A full appreciation of the Diadumenus and of our Heraeum finds gives us quite a new conception of the art of Polycleitus. For years I had in my teaching constructed a view of Polycleitus based chiefly upon the Doryphorus, the poor copy of the Diadumenus from Vaison,[3] and the Amazon, as well as upon the chief passages referring to him in Pliny[4] and Quintilian.[5] In this light Polycleitus appeared as an artist of undoubtedly great talent, but devoid of genius, who never attained to the truly artistic and spiritual expression, the grandeur of a Phidias, and was wanting in weight — *deesse pondus*. And though he may have added ideal beauty to his statues, he never attained that ideal which the Greeks, like Phidias, embodied in the statues of their gods — *nam ut humanae formae decorem addiderit supra verum, ita non explevisse deorum auctoritatem videtur*. His great merit lay rather in the academic direction of sober construction, drawing together in a masterly manner, in technical and more theoretical control over his art, the separate currents of genius in the various Greek artists that made for the pure beauty, grace, and grandeur which Hellas has handed down to posterity — *erudisse* but not *aperuisse*. The highest praise bestowed upon him and his works is more of a theoretical and sober nature, *diligentia ac decor*. He is thus able to establish a canon of human proportions from which subsequent artists could take the rules of art as from a law — *quem canona artifices vocant liniamenta artis ex eo petentes veluti a lege quadam*. But he achieves this at the cost of the spontaneity and variety of his productive genius and imagination. And thus there is a certain sameness in his work, which a mere survey of the subjects ascribed to him — chiefly athletes and purely masculine figures — suggests, so that they

[4] *N. H.* XXXIV. 56: Proprium ejus est uno crure ut insisterent signa excogitasse, quadrata tamen esse ea tradit Varro et paene ad exemplum.

[5] *Inst. Orat.* XII. 10. 7: Diligentia ac decor in Polycleto supra ceteros, cui quamquam a plerisque tribuitur palma, tamen, ne nihil detrahatur, deesse pondus putant; nam ut humanae formae decorem addiderit supra verum, ita non explevisse deorum auctoritatem videtur; quin aetatem quoque graviorem dicitur refugisse nihil ausus ultra leves genas.

are all after one pattern, or closely follow the model — *proprium ad exemplum* or *unum exemplum*. One can even recognize this in that it is thought necessary to draw attention to one definite attitude, the walking attitude, as peculiar to him, — *proprium eius est uno crure ut insisterent signa excogitasse*, — an advance over the stiffness of archaic artists which the transitional sculptors, Pythagoras of Rhegium, and Myron, had long since achieved. And all his works are rather heavy and massive, vigorous and square in type, — *quadratae tamen esse ea tradit Varro*, — sane and healthy and unsentimental, like the Doryphorus. On the whole, with all his greatness and the lasting advance his activity marks in the history of Greek art, he followed the conservative spirit of Argive tradition as confirmed by Ageladas and laid down in the archaic period by the sculptors who said of themselves in an inscription that they practiced art "as handed down by their forefathers." [1]

This was, in short, the estimate I had previously formed of the art of Polycleitus. Yet even while enunciating these views, I had frequent misgivings when I realized the supremely high place accorded him by antiquity, his juxtaposition with Phidias, so that sometimes, as is done by Cicero, he is even placed highest in the scale. I felt that the Doryphorus by itself, as we know that statue, could not account for the beauty and grace ascribed to his statues and his heads, by trustworthy authorities. With the discovery of our Heraeum marbles, and of the new and better copies of the Diadumenus and the advance these mark in the treatment of the head, the doubt as to the fairness and completeness of my former view became stronger, and a complete reconsideration of the ancient literary records concerning that artist has convinced me of this one-sidedness. While I feel that in general the former negative appreciation of the great master holds good for the Doryphorus, I am convinced that such a view would apply to the artist's career only at the earlier stages, to which the Doryphorus belongs (say somewhere about B. C. 450), while the work at the Heraeum (circ. B. C. 420) marks a later and far more advanced period. Who could do justice to Raphael if he only considered the works of the earlier Peruginesque period?

While thus, in spite of its one-sidedness and consequent exaggeration, my former view does apply to one characteristic side of this great Argive sculptor, we must now realize that there were many sides not adequately touched by it, and these not only present a greater variety and versatility of subject, but even show that the quoted passages dealing with his style and technique suggest a different interpretation in the light of the new discoveries of the Diadumenus and of our Argive marbles.

The chief artistic qualities of Polycleitus are summed up by Quintilian as *diligentia* and *decor*, qualities which I formerly felt were not naturally in harmony with the master of the Doryphorus, the creator of the square, massive, healthy type of physical strength, with broad chest and strong limbs standing in simple power upon one leg, the other resting on the toes behind.

This *decor*, as we can now understand it, comes nearest to our word "beauty," the absolute beauty of form. To render this absolute beauty of form in human beings, the artist had to avoid the developed forms of mature manhood, and had to limit himself to youth (*nihil ausus ultra leves genas*); and though he no doubt idealized the forms of youth into complete harmony and beauty of proportion (which he established in his canon) as they are not met with in nature, combining the actual details of life into the

[1] τέχναν ἐδόκει ἐκ προτέρων, inscription on the work of the early Argive sculptors Eutelidas and Chrysothemis, mentioned by Pausanias, VI. 10. 4.; Overbeck, *Schriftquellen*, No. 388.

ideal unity of perfect harmony (*ut humanae formae decorem addiderit supra verum*), he could not give them that spirituality of expression and soul and character and dignity inherent in the great gods like Zeus (*non explevisse deorum auctoritatem*) which Phidias had given. He had further to avoid the violent contortions of the body and the expression of moods and pathos in the face to preserve his beauty of outline in the body and his severe proportion of line in the face. And further, this absolute beauty did not in his works depend upon the sensuousness and softness of treatment (he is still the sculptor of the "square" Doryphorus, a character maintained in essence in the body of the Diadumenus), not upon the *morbidezza* of the modeling of flesh, as in the later fourth-century art, nor upon the anatomical insistence in modeling of muscles, as in Hellenistic art. It is thus significant that we find only two statues of female figures enumerated among his works; one was the most serious and matronly divinity Hera, and the other the most masculine woman, the Amazon. His "beauty" of treatment depended upon proportion and line and upon the extreme and perfect finish of his work without appeal to sensuous associations. This is expressed in the word *diligentia*, which leads to the *decor*. This finish within the careful study of line and outline in his composition of every figure, he put into the most careful and complete modeling of every detail so that, as Cicero [1] indicates when he instances the treatment of the lion-skin or the Hydra in his statue of Heracles with the Hydra, every detail of modeling is given with the utmost completeness and mastery. And this quality of art Polycleitus himself singles out with emphasis in the words which Plutarch puts into his mouth.[2] "The earlier stages in sculpture are not so important," he says; "the real work of the true artist begins when it comes to the finest last point of finish, the finger-nail point, when the clay adheres to the finger-nail." "There are," he observes, "the ordinary workers in any sphere, and those who really advance their art in the world, — those with high ideals, who must go further than what is 'just good' or 'just good enough,' 'who use their ideal as if it were a measure,' and give the most difficult last touch of perfection which makes the great work."

This was the aim he set himself, and in his sculpture it led to the complete harmony of line and the extreme finish of the modeling. Without suggesting anything like realistic reproduction, it means supreme finish of detail; and the instances of such supreme finish in the nude male torso from our metopes and in the hair of the Diadumenus help us to realize this.

We can understand thus that, sacrificing everything to this absolute beauty of form, he may be wanting in the weight (*pondus*) and sublimity of a Phidias, in the sensuousness and pathos of a Praxiteles and a Scopas, in the dramatic action of the Pergamenians and Rhodians. Raphael could not remain Raphael while giving the strength and grandeur of Michael Angelo, or the sensuousness and glow of Titian, or the dramatic sensations of the Carracci. Polycleitus is the sculptor of Beauty, as Phidias is the sculptor of Sublimity, Praxiteles of Grace and pure Greek sentiment, and the Pergamenians and Rho-

[1] *De Orat.* II. 16. 70: Similiter arbitror in hac sive ratione sive exercitatione dicendi, qui illam vim adeptus sit, ut eorum mentes qui . . . audiant ad suum arbitrium movere possit, illum de toto illo genere reliquarum orationum non plus quaesiturum, quid dicet, quam Polycletum illum, quum Herculem fingebat, quemadmodum pellem aut Hydram fingeret, etiamsi haec numquam separatim facere didicisset. This also shows, as regards the subject and the situation, that the fully developed Polycleitus was far from being restricted to the simple walking attitude of his Doryphorus; and we can understand how, when his task was to represent battle-scenes, as in our metopes and pediments, he could extend his *diligentia* to the adequate rendering of figures in motion.

[2] *De Profectib. in Virt.* 17. *Quaest. Conviv.* II. 3. 2.

dians of Action. This beauty we have long since called "classical," in the restricted sense, as distinguished from the ruder Gothic and the romantic. Polycleitus is thus the most truly classic artist of antiquity.

The fuller and truer appreciation of Polycleitus, our Heraeum discoveries enable us to grasp and make our own. In the future these marbles, together with the replicas of the Doryphorus and Diadumenus, will have to be the starting-point in the study of that artist and his school, as the few fragments from Tegea must be the fixed point of departure in the study of the art of Scopas.

DESCRIPTION OF THE PLATES.

PLATE XXX.

Portion of a Metope fitted together out of seven separate fragments, consisting of Head, Torso, Legs above the knee, Shield, and Portions of the upper Background, with projecting band from top of a Metope. The arms and shoulders are broken away; the left arm, extended, held the shield, the inside of which is turned toward the spectator; the right arm and shoulder were drawn back, and, no doubt, the hand held the sword or spear. The action of the figure is not clear: the weight rested on the right leg, which was bent outward, the left leg drawn up so that the thigh approached a horizontal position, the body twisted round toward the right and slightly drawn back. The head, turned toward the right shoulder and inclined downward, suggests an adversary lying or crouching on the ground, on or against whom the uplifted left foot may have been pressed.[1] The action of the warrior would then denote a drawing back of the upper part of the figure in order to strike or thrust downward. A small drill-hole in the abdomen near his right groin might, then, perhaps, have served to fix a bronze support to the shaft of the spear, which would have passed from his upraised right hand, drawn backwards, down past his left thigh to the opponent at his feet. On the other hand, the action may denote a drawing or sinking back on the part of a wounded warrior, and the forward droop of the head might support this view, as well as the fact that the shield is turned out so as to show the inside, and leaves the body unprotected. The small drill-hole might, then, have held a bronze arrow, or the point of some other weapon, to denote the fact that the warrior was wounded.[2]

Like the warriors in the Aeginetan pediment and the groups at Olympia by Onatas,[3] the warrior was thus armed only with helmet, shield, and spear (or sword), and had no breastplate or greaves.

Dimensions: —

Total height as mounted	78. cm.
Breadth " "	63.
Elevation of figure from background	17.5
Breadth of body at waist	15.7
" " " at groin	16.
" " " below shoulder	19.8
" of neck	7.6
" of right thigh	10.7
Depth " "	11.5
Height from base of neck to mouth	23.
Estimated breadth of shield (horizontal diameter)	54.

Unfortunately, the body of this warrior is so much fractured, and what remains of the surface has suffered so much from corrosion, that the surface of the figure cannot give us an adequate notion of the finished modeling carried to so high a point of excellence in these metopes, although it does convey the life-like freedom in the pose and general composition. Fortunately, however, another male torso from the metopes (PLATE XXXIV.) is in a wonderful state of preservation with regard just to the surface modeling of the nude, and thus supplements our knowledge of the style and workmanship of the artists who made these metopes. Still, in spite of corrosions and fractures, the working of the muscles on the warrior's right side above the waist, as well as in the region of the groin[4] and of the thighs, manifests careful observation and study of muscles and high finish of modeling. There is but one further point to which it is important to draw attention, as bearing

[1] Compare for possible parallels the metopes in Michaelis, *Der Parthenon*, pl. iii. Nos. iii., xxiii., xxiv., xxvi., pl. iv. No. xxxi., pl. v. Nos. ix., xiii.; *cf.*, also, pl. iv. and what is said on this point there.

[2] Finally, as the whole of the front portion of the body has split away, it is conceivable that the drill-hole was used to repair this fracture (caused by some flaw in the marble) in ancient times.

[3] Pausanias, V. 25. 10.

[4] See on this point remarks on PLATE XXXIII.

upon what has been said in the Introduction to the Sculpture as regards the methods of manipulation in the marble-work employed by Polycleitan artists: it is the frequent use of the drill. This is used to bore holes for the insertion of bronze bars or ornaments, as the small one at the groin, the larger ones in front of the ear and immediately below the helmet, and the still larger ones above the shield. The hole between the ear and the right temple either served to hold some bronze ornament connected with the helmet, or held the end of a spear which indicated the fatal wound received by the warrior. The large hole over the shield shows that these metopes, differing in this from those of the Parthenon, were marble slabs, comparatively thin, fixed on a ground behind the metope, and not the solid blocks, part of the whole construction of the entablature. It shows that the marble imported from a distance was valuable material which had to be used economically. Still more interesting is the use of the drill at the back over the buttocks, to work away the material from the background, a practice already referred to in connection with the metope heads. The head, on the other hand, is in excellent preservation, not even the tip of the nose being wanting. It is evidently that of a warrior with a crested helmet. A portion of the crest is broken away. The head and face have all the massive, square proportions common to the other metope heads (cf. PLATE XXXI.), with the same broad forehead, the same massive, heavy cheeks and rounded chin, the same nose, broad from root to tip, the same treatment of eyelid and orb, though here the inward slant of the orb is probably connected with the downward look, which again may be the only sign the sculptor adopted to indicate the suffering of a wounded warrior. Above all, there is the same extremely characteristic mouth, with the short, protruding upper lip, and the curious flattened arch, indicating more of the red portion than is usually the case, while the lower lip, not tightly pressed to the upper lip, has the same fullness and the projecting thickening in the middle — all giving a peculiar pouting, stolid expression which is borne out by the heavy character of the face as a whole.

Dimensions: —

Breadth of face	8.6 cm.
Length of face (helmet visor to chin)	10.2
Depth of head (forehead to back of helmet)	13.2
Outer corner of eye to outer corner	7.2
Inner corner of eye to inner corner	2.3
Breadth of nose (at nostrils)	2.5
Breadth of mouth	2.7
Breadth of helmet, extreme	11.4
Length of nose	4.
Breadth of ridge over crest	1.8
Height of visor	2.8
Breadth of eyes (outer corners)	2.7

It will be seen that these measurements are practically the same as those of the youth's head figured as Nos. 1 and 2 on the next Plate.

PLATE XXXI.

Nos. 1 and 2. *Two views of a Youth's Head from a Metope.* Parian marble. This head was first published by me in the *American Journal of Archaeology* [1] shortly after its discovery in 1894. As we realized immediately after its discovery, the head of this *ephebus*, corresponding in its peculiar size and style of workmanship to all the other metope heads from the Heraeum, bears the unmistakable characteristics of Polycleitan sculpture as manifested in the hitherto known statues of the Doryphorus and Diadumenus.[2]

Dimensions: —

Height of fragment (neck, 8 cm.)	15.9 cm.
Breadth of face (cheek to neck)	8.7

[1] Vol. IX. (1894), pp. 331 ff. pl. xiv.; reprinted in *Papers of the American School of Classical Studies at Athens*, vol. VI. pp. 252 ff. pl. xx. It has since then been reproduced by Mr. Frazer, *Pausanias*, vol. III. p. 172.

[2] For the further description of this point, as well as the conditions of its discovery, I must refer to the original paper in the *American Journal of Archaeology*, as well as to what has been said on pp. 168 ff., in the Introduction to the Sculpture in this volume.

Height of face (hair to chin)	10.6
Depth of head (forehead to back)	13.2
Outer corner of eyes to outer corner	7.3
Inner corner to inner corner	2.2
Length of nose	4.
Breadth of nose (at nostrils)	2.3
" " mouth	2.7
" " eyes (inclusive lids)	2.7

Both in the profile and in the full face view the head shows the squareness and massiveness characteristic of Polycleitan types. These characteristics are moreover manifested in a marked manner in all the other features, especially in the nose and mouth. The nose is perfectly preserved, and presents a broad ridge from root to tip, with a *very* slight thickening about the middle. In proportion to its width it is thus comparatively short, and adds to the heavy expression which this and the other heads from the metopes have in common with the heads whose attribution to Polycleitus is well-established. One of the most characteristic features in this and in all our metope heads is the mouth. As the strikingly individual treatment of this expressive feature in the human face is common to all these heads from the Heraeum (the Hera as well), and is to be found in the same form in the heads hitherto recognized as Polycleitan, I must here enter into further details.

The peculiar pouting or, rather, stolid expression which all these heads have in common is due not only to the strikingly thickened and protruding mass of the lower lip to which reference has been made above,[1] but to the treatment of the mouth in every aspect and in every part. In the upper lip, which is never firmly pressed upon the lower lip, the thickness of the projecting deep red portions of the human lip is markedly indicated in almost the whole extent of the lip towards either corner of the mouth,[2] whereas in most other sculptured heads this thickening serves to accentuate the rise of the firm archer's bow (so-called Cupid's bow) on either side of the middle, and thus loses the effect of heaviness by contributing to the well-curved, symmetrical outline of this bow firmly drawn. This difference can be best appreciated by comparing, for instance, the mouth of any one of the Polycleitan heads (Fig. 88ª), including all ours, with the type like the head at Bologna, identified by Furtwängler with the Lemnian Athena of Phidias (Fig. 88ᵇ). Owing to this difference, moreover, the downward protrusion in the middle of the upper lip seems to be caused in mouths like that of the "Lemnian Athena" by the upward curve of the two bows of the arch on either side of the middle; and this gives to the whole mouth an expression of vivacity if it does not suggest a smile — the central protrusion seems to be caused by the upraising and arching of the portions on either side of the centre. In our Polycleitan heads, on the contrary, this central protrusion of the upper lip actually appears like a downward pressure of the centre, because there is no active suggestion of an upward movement in the portions of the lip on either side of the centre.



FIG. 88ª. — From the Heraeum Metopes.



FIG. 88ᵇ. — From the Lemnian Athena.

Still more characteristic and individual is the treatment of the upper lip when seen in profile. The distance from the point where the lip joins the nose to the beginning of the "red" of the lip is almost abnormally short in all the Polycleitan heads, especially when considered in proportion to the distance between the beginning of the red in the upper lip above and the end of the red in the lower lip below. This will become clearer when all these heads from the Heraeum, together with all the Doryphorus and Diadumenus heads known, as well as some of the most characteristic Amazon heads (such as the Amazon of Berlin and one in the British Museum, London) [3] are placed side by side. It will then be seen how all have this marked feature in common, and this will be realized the more readily when the treatment of the upper lip in these is compared with

[1] *Cf.* p. 159.

[2] Mr. Edward Robinson drew my attention to the flattening of this curve in the front view.

[3] On the ground not only of this feature, but of the general outline and character of the heads as a whole, I should consider the Amazon heads which Michaelis (*Jahrbuch des Kais. Deutschen Arch. Inst.* Berlin, I. 1887, pp. 27 ff.) assigns to type I., as nearer the art of Polycleitus than either type II. (the Amazon of Woerlitz, pl. iv.) or type III. (the Amazon at Petworth, pls. i. and ii.).

that of the so-called Lemnian Athena. It will then be seen how the space between the nose and the red of the lip in all Polycleitan heads (Fig. 89ª) is not more than half the distance between the limits of red in the upper and lower lip;[1] while in the Lemnian Athena (Fig. 89ᵇ) the two distances are about equal. The rough sketch of this feature here given will illustrate this point.

Furthermore, it is important to note that this interval in the Polycleitan heads is strongly curved inwards, the curve projecting slightly where it joins the red of the upper lip, while in the Lemnian head it is comparatively straight or shallow without the marked projection below. The effect thus produced in the Polycleitan heads is, that the upper lip, in fact the whole mouth, protrudes, and accentuates in its totality the pouting or heavy expression which we have already noted in the lower lip.

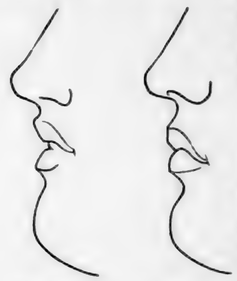


Fig. 89ª. — From the Heraeum Metopes.

Fig. 89ᵇ. — From the Lemnian Athena.

The chin is slightly damaged.

The hair has already been described on pp. 171 ff.

Reference has already been made to the peculiar use of the drill in this head for purposes of undercutting where the head approaches the background of the relief.[2] The left side of the head and the portion of the back of the head toward the left side were nearest the background, and though they were rudely undercut, there is no attempt at finished modeling here, neither the locks of the hair nor even the left ear being indicated. Deep grooves that are left manifest this rough work of the drill as well as that of the chisel. From this working it appears that the head was not meant to be seen quite in profile, but slightly turned round towards the left shoulder of the figure.

No. 3. *Head of Amazon from the Metopes.* Parian marble.

This head, found in 1892, was already figured and described by me in the preliminary publication.[3]

Dimensions: —

Height of fragment (pointed helmet included)	22.6 cm.
Breadth of fragment	15.
Depth of head	12.3
Extreme breadth of face	8.3
Width from outer corners of eye	6.6
Inner corner to inner corner	2.4
Length of nose	3.6
Breadth of nose (at nostrils)	2.5
Breadth of mouth	2.8
Breadth of eyes	2.5

In the preliminary publication I left it doubtful whether this was the head of an Amazon or not. Further comparative study of the head itself and of other Amazon types, as well as the fact that some portions of the female figures among these metopes were of Amazons (see, for instance, Plate XXXV.), make it practically certain that this head is that of an Amazon. The peculiar helmet, rising to a point like a Phrygian cap, is typical of the Amazon. It appears to me that the helmet here given is really a development of the Phrygian cap in metallic form. Perhaps the sculptor invented this form of helmet for the Amazon out of the Phrygian cap typically ascribed to her. This would explain in an interesting manner the curious piece of drapery which flaps back from the head on the left, immediately below the helmet, above the hair. It is readily confused with the hair at that point. This piece of drapery in this position, under and behind the helmet, is a kind of "survival" of the soft Phrygian cap made of cloth. The cloth cap, as we see it in Persians and Amazons (for instance in the figures of Persians and Amazons in the Vatican and at Venice, ascribed to the Pergamenian school), was like the long-pointed knitted caps which the

[1] Of course there is a slight variation in this proportion, as the lips are more or less parted.

[2] Introduction to Sculpture, p. 154 ff.

[3] *Excavations of the American School of Athens at the Heraion of Argos*, 1892, p. 16, pl. vii.

Neapolitan fishermen now wear, and either could be drawn far down over the back of the head with the flap hanging down, or could be twisted or tied at the back. When a metal helmet of this form takes its place, it appears that a piece of drapery was inserted under it at the back of the head, probably meant to protect the back of the head from the sun, as is frequently done with helmets and military caps in the present day. One of the Amazons from the frieze of the Mausoleum of Halicarnassus[1] shows this arrangement in a manner very similar to that of our Amazon from the Argive Heraeum.

Though this head is slightly disfigured by abrasions at the tip of the nose, over the right eye, and on cheek and chin, it is in a comparatively excellent state of preservation, and shows in a marked manner all the characteristic features which we have hitherto ascribed to these heads. The evident inclination of the head to the left shoulder gives more expression or sentiment to this head than is usual among these works. The position of the head was almost in full face, slightly more towards the background on the right side, in which direction the head is inclined. At first it looked as if the mass broken away at the right was a kind of *puntello* joining the head to the background, and that thus the head was in profile turned to the right; but closer examination makes it more probable that this projection represented a mass of hair clutched by some adversary pulling the Amazon over on the right side. Still the head must have been slightly turned inward on the right, as this side of the face is less fully finished in carving than the other side, in which the hair and the mass of drapery beneath the helmet were fully visible.

No. 4. *A split Portion of the Head of a Warrior, from the Metopes.* Parian marble.

There remains here the left half, including both eyes, of a helmeted head very similar to that of the warrior on Plate XXX.

Dimensions: —

Height of fragment (chin to socket of crest)	16.6 cm.
Breadth of fragment	9.3
Depth of fragment (forehead to back)	13.3
Height of face	10.
Outer corner of eye to outer corner	7.
Inner corner of eye to inner corner	2.
Length of nose	3.5
Breadth of nose (at nostrils)	2.3
Breadth of mouth	2.8
Breadth of eyes	2.6

The side here preserved was evidently not the one foremost, from the spectator's point of view, since, towards the back, the carving is hardly finished, and must at that point have approached the background of the relief.

PLATE XXXII.

Nos. 1 and 2. *Female Head, from the Metopes.* Parian marble. Here given in full face and in profile.

This head is the only one from the metopes which was discovered by Rangabé in his excavations of 1854.[2]

Dimensions: —

Height of fragment	17. cm.
Breadth of fragment	12.5
Depth of fragment	15.
Breadth of face	8.4
Outer corner of eye to outer corner	6.6
Inner corner of eye to inner corner	2.1
Length of nose	3.3
Breadth of nose (at nostrils)	2.4
Breadth of mouth	2.7
Breadth of eyes	2.6

[1] Overbeck, *Gesch. der Griech. Plastik*, II. fig. 171, Series iv. No. 3.

[2] See General Introduction, pp. 67 ff.

The head is evidently that of a fully matured girl or young woman and, in its original position, was meant to be seen almost in full face (about ¾ full face). The variation from the full face view consisted in the turn of the head to the right, so that the left side of the face was less fully visible than the right side. This is manifest from the fact that the right side (her left) is less complete in its modeling and elaboration. The hair, sketchily treated throughout, is hardly modeled at all on the left side, not more fully than it is on the back; the eye on this side is smaller and less fully and delicately worked in the orb, lids, and brow. The same applies to the cheek. In the profile view here given we have nevertheless presented this imperfect side because it illustrates so fully the methods of cutting away the stone from the background of the relief, and the use of the drill for this purpose — to which frequent reference has been made above. The whole square and massive outline characteristic of these heads is here manifest in both views, as is also the peculiar rendering of the several features, — eyes, nose, and, especially, the mouth. The hair, treated in a more sketchy manner than is the case in any of the other heads, is parted in the middle, the masses in front drawn over on either side, and tied together behind. They thus cover the ears, leaving only the lobes visible at either side. A noteworthy peculiarity in the treatment of this hair is the fact that the parting is not accurately in the middle of the head, above the centre between the brows, and that its line and direction does not follow the line of the nose. Further notice will be taken of this fact in the description of the helmeted head on PLATE XXXIII. As this head was not supposed to be seen in the profile view, neither of the ears is indicated with any degree of finish, — the lobes are merely sketched in. If we bear in mind the sketchy character of the work and the fact that this small head was to be seen at some distance from the spectator, we must be struck by the grandeur and dignity coupled with a severe grace which the artist here succeeded in giving to his work.

No. 3. *Female Head from the Metopes.* Parian marble.

A girl or young woman whose hair is grasped on the top of her head by some adversary (traces of the fingers still visible), the head being pulled over to the left.

Dimensions: —

Height of fragment (including 3 cm. of neck)	19.6 cm.
Breadth of fragment	13.
Depth of fragment	13.
Extreme breadth of face	8.6
Outer corner of eye to outer corner	7.1
Inner corner of eye to inner corner	2.1
Length of nose (broken)	3.7 ?
Breadth of nose (at nostrils)	uncertain
Breadth of mouth	2.8
Breadth of eyes	2.8

The scene given in this metope was evidently one of contest in which a female figure is being violently grasped by the hair. This situation is often presented in battles of Amazons (three times on the Phigalian Frieze, in the Mausoleum Frieze, and on numerous vases); or in scenes of the sack of a city (as when Cassandra is dragged from the altar at which she has taken refuge);[1] or, finally, in such scenes of abduction as are to be found in the Centaur battles. As the destruction of Troy was represented in the sculptures, according to the testimony of Pausanias, and the battles of Amazons, from the testimony of the extant monuments themselves, this head would probably belong to a group from one or other of these scenes. The situation, to the indication of which this head gave expression, is strongly individual, and thus the artistic treatment of this head differs in some respects from that of the others. It is more violently drawn to one side, and this action necessitates a greater degree of expression than is to be found in the placid heads hitherto described. The hair being drawn up on the top, the slightly indicated waves are all vertical in the grooves; while the line of demarcation between the hair and the forehead is indicated in a severe and precise arch from temple to temple; the brow remains comparatively smooth, but the line of the eyebrows is not so "placidly" horizontal with flat, broadened lines as is the case, for instance, in the head that we have just described. The line of the brow thus rises sharply upwards from the outer angle

[1] Cf. Overbeck, *Bildwerke zum thebischen und troischen Heldenkreis*, pl. xxvii.

towards the nose, and thus corresponds to the line of the more pointed arch in the demarcation of the hair above the forehead. The eye itself is more widely open, the orb more prominent and rounded than has hitherto been the case, while the lids are more evenly joined at the outer angle. The nose is unfortunately broken away. The treatment of the region immediately below the lower lid is also softer than in the heads previously discussed. The total effect of this treatment is a comparatively greater softness and less placidity and repose in the expression of this face than is seen in the head immediately above it. More complex sentiment is further produced by the hollow groove beside the nostril, accentuated by a softer rise in the cheek at that point. There are no further indications of emotion or suffering, — unless these be found in the treatment of the mouth, which is here more firmly closed than in any one of the other heads. The original position of the head was again probably almost full face.

No. 4. *Head of a Young Girl, from the Metopes.* Parian marble.

Dimensions: —

Height of fragment	15. cm.
Breadth of fragment	12.6
Depth of fragment	12.7
Extreme breadth of face	8.6
Outer eye to outer corner	6.8
Inner corner to inner corner	2.
Length of nose	2.8
Breadth of nose (at nostrils)	2.5
Breadth of mouth	2.5
Breadth of eyes	2.5

It was at first doubtful whether this head belonged to a male or a female figure, but further examination showed that it is undoubtedly that of a girl. The hair, though modeled with some care only in front (more especially on the right side), is quite unfinished and roughly blocked out on the top, back, and sides behind the ears, but the parting in the centre and the pointed arch-like demarcation of the line between hair and forehead show that it did not consist of short curls, but of long strands gathered up from either side of the parting and tied together behind. Moreover, the softer treatment in the modeling of the whole face shows it to be that of a girl and not of a young man. The actual position of the head in the relief was about ⅞ full face, the head turning towards the left (about like the view here given on the Plate), only slightly more turned to the left. This is evident from the fact that the left half of the face is less fully elaborated on the side, and more especially from the treatment of the hair and the ear. The ear is but very slightly indicated on the left side, while on the right side it is perfectly modeled, and seems slightly turned forward in order that it should be properly visible. Further, the hair in front on the left side is merely roughly blocked out at the point above and in front of the ear, while no attempt at complete modeling is made on this side from the parting to the ear at a distance of half an inch above the forehead. Moreover, it is on the left side at the back that a series of five drill-grooves are manifest. Unfortunately in this case, too, the nose is broken away, while the upper lip, which was curiously drawn up so that the teeth should show, is also damaged in the middle portion. The expression of this head is distorted by this slight fracture of the upper lip. The lower lip of the opened mouth shows the characteristic thickening in a marked degree. On the whole, this small head shows more vivacity than do any of the others, and, in spite of the disfigurement resulting from the fractures at nose and lip, possesses a peculiar charm.

PLATE XXXIII.

Nos. 1 and 2. *Head of Athena with Helmet.* Parian marble.

Dimensions: —

Height of fragment	20. cm.
Breadth of fragment	14.6
Depth of fragment (measured from front to back of helmet)	17.
Extreme breadth of face	10.2
Outer corner of eye to outer corner	7.7

Inner corner of eye to inner corner	2.7
Length of nose	4.6
Breadth of nose (at nostrils)	3.
Breadth of mouth	2.7
Breadth of eyes (including lids)	3.3

It will readily be seen that this head is slightly larger than those hitherto examined; and though the head undoubtedly formed part of a high relief, the difference in dimensions caused a doubt whether it was to be ascribed to the metopes at all; but when these dimensions were compared with those of the Amazon head measured from the point of the helmet to the chin, and when it was realized that this head was that of a divinity, the force of this doubt was no longer felt. This was especially the case when it was realized that similar differences exist in all known reliefs and metopes.[1] That this was the head of a divinity, in fact that of Athena, who would be present at such a contest,[2] became manifest when once it was recognized that this helmeted head was that of a female and not of a male figure. As in the case of the young girl's head just described, the treatment of the hair did not make this manifest at once, for the rough blocking out at the sides does not make it apparent to the hasty observer that it was long hair parted in the middle and drawn over the ears behind the back of the head. Careful observation of the hair at the side will, however, show that this is the case, and this conclusion will be confirmed when the mass behind the ear at the back is recognized as a continuation of the hair in front. The treatment of the fleshy part of the face, moreover, is softer than in that of the male warriors and the youth on PLATES XXX. and XXXI., and finds its closest parallel in the girl's head (PLATE XXXIII. No. 4). Unfortunately, the face is much disfigured by fractures at one side of the nose, which, so far as extant, together with the eyes, has the same characteristic treatment found in all these heads. This common treatment is still more marked in the modeling of the mouth. The helmet, too, the central portion of which is broken away, is peculiar to Athena on reliefs of this period. A detail of this helmet serves to illustrate clearly the care and "science" of the sculptor as he considered the peculiar "perspective" effects in sculpture from the point of view of the spectator. The effect of such considerations upon the sculptor has already been noted with regard to the sculptures of the Parthenon.[3] In the view presented in No. 2 it will be seen that the central division of the two halves of the helmet and the metal tongue which projects between them (the cheek pieces and the nose covering) are not in their proper place immediately above the middle of the forehead, nor do they follow the line of the nose. When, however, the head is seen more in profile, turned to the right and from below, as is the case in the view given in No. 1, this discrepancy, painfully manifest in the front view, is no longer felt. This is due to the fact that this head was not seen in full face, but slightly inclined upwards, and turned to the right. This is manifest from the fact that on the right side, ear and hair are not so completely worked as on the left side and show chisel marks. It was this position which necessitated the peculiar direction given this dividing line in the helmet in order that, from the spectator's point of view, the lines should fall in their proper places. In the same way the slight divergence in the parting of the hair of the female head on PLATE XXXII. is rectified when the head is turned slightly to the left and is seen from below; while the Amazon head on PLATE XXXI., with the divergence between the central line of the helmet and the line of the nose, is also rectified when tilted back and viewed from the right — an experiment which can even be tried with the Plate.

Nos. 3 and 4. *Portions of two Heads.* Parian marble. From eyes to chin.

Dimensions of No. 3: —

Extreme breadth, cheek to cheek	12.2 cm.
Height, bridge of nose to chin	11.5
Outer corner to outer corner of eyes	9.6
Inner corner to inner corner of eyes	3.2
Breadth of nose at nostrils (base)	3.6
Breadth of mouth	4.2
Eye-holes	5.3

[1] See Introduction to Sculpture, p. 148.

[2] Compare, for instance, the friezes of the Temple of Nikê Apterus at Athens, the Theseum, etc.

[3] Cf. my *Essays on the Art of Pheidias*, pp. 79, 80, 205, 227.

Unfortunately, both No. 3 and No. 4 are in so fragmentary a condition that little can be said of them, and we can only feel regret at what we have lost in the missing parts. As will be seen from the dimensions, these heads, which belonged to figures in the round, did not form part of the metopes, nor have we strong grounds for attributing them to the pediments. The eyes in No. 3 were hollowed out with deep grooves, and were probably originally supplied by some paste set into the sockets.

In No. 3 there is a slight difference in proportion of outline, in that the cheeks at either side of the mouth maintain a square massiveness in an exaggerated form. This effect is no doubt heightened by the fact that the front of the chin is damaged. The mouth and nose, however, show the characteristic treatment of Polycleitan art; and the perfection of the workmanship in both these fragments makes us realize that these were once good specimens of the marble sculpture of the period of Polycleitus.

PLATE XXXIV.

Two views of a Torso of a nude Youth, from the Metopes. Right leg and arm upraised, with a hand pressed under this upraised arm, belonging to some figure against whom the youth is advancing to deal a blow with the sword, originally held in his right hand. Parian marble.[1]

Dimensions: —

Breadth of fragment as mounted?	34. cm.
Height of fragment as mounted	55.
Depth of fragment as mounted	23.
Navel to base of neck	19.5
Nipple to nipple	13.
Breadth of lower waist	17.3
Breadth of lower waist just above navel (narrowest part of torso)	16.
Breadth of thighs inside to outside	11.
Breadth of thigh front to back (left thigh)	11.3
Breadth of arm (raised) at shoulder (top to armpit)	6.2
Breadth of wrist of hand placed on torso	3.8
Breadth of hand on torso	5.7

If in the metope representing a warrior (PLATE XXX.) we had to deplore the state of imperfect preservation of the surface, so that we learn but little from it as to our artist's modeling of the nude, it is a piece of great good fortune that this torso from the metopes has come down to us in an exceptional state of preservation with regard to the surface of the marble, as showing the finished modeling of the nude.

The youth here represented was undoubtedly a warrior shown in the supreme moment of contest in one of the battle scenes from the metopes. His opponent, to whom he is dealing the fatal blow, was probably not of his own sex, but an Amazon. This is suggested by the short, dainty hand with its little dimples on the back below the fingers, and the delicacy of articulation of each finger. The adversary has probably sunk down on one knee and is pressing her upraised hand against the youth's side below his upraised arm, while he, resting his weight upon his left leg, has probably planted his upraised right foot upon her thigh as she is kneeling before him just before he strikes. An extant portion of a thigh, including the knee-cap from the metopes (PLATE XL.), shows the foot of another figure planted just above the knee, in the manner in which the youth from our torso planted his foot on his fallen adversary. The upper part of the body was thus strongly drawn backward to the right, while the lower portion pressed forward to the left in the direction in which the upraised right foot was planted on the adversary. The left leg, upon which the weight of the figure was chiefly carried, must have been slightly bent at the knee, as is evident from the tension of the muscles of the thigh.

In the modeling of the nude this torso is among the finest that have come down to us from Greek sculpture. The general masses of muscles of the chest and of the abdomen, firm and decided in their articulation without hardness, gentle and flowing in the more delicate transitions without softness and without unnecessary insistence upon details, are as far removed from any trace of the

[1] Found in 1892. See *Excavations*, etc. pl. vi.; Brownson, *Am. Jour. of Arch.* VIII. pl. x.; Frazer, *Pausan. l. c.*

conventionalism of archaic art, or from the severity of the early fifth century B. C., as it is from the over-elaborateness and anatomical pedantry which began to set in towards the close of the fourth century B. C. In the skill of modeling and in the care with which every detail in the surface is finished, it really marks one step in advance of the metopes of the Parthenon. Though these metopes are larger, they do not show the same completeness of finish in the modeling which is manifested by these metopes of the Polycleitan period and school. The minute care in the rendering of each detail, to which attention has been drawn in the Introduction to the Sculpture (pp. 156 ff.), is illustrated by the delicate details in the modeling of the hand of the female adversary, and especially in the treatment of the upper parts of the thigh, and the curious round protrusion in the groin to which reference has already been made. I have had casts and photographs of this torso examined by several friends, surgeons and anatomists, leading authorities on this subject both in England and in America; but it has hitherto remained an unsolved problem. From their knowledge of the human figure derived from the dissecting-room and the operating-table they have not been able to account for this feature in normal anatomy. They either confessed their inability to explain it, or maintained that it was a pathological phenomenon, the result of a too violent strain or of the enlargement of the glands. But it was difficult to believe that, especially in this period of art, so accidental a feature should have been copied, especially when we realize that in the torso on PLATE XXX. we have in the right leg of the warrior an indication of the same rise, though in a slighter and less markedly visible form.

Recognizing these facts, I have carried on experiments with the living model under the direction of Dr. Louis Waldstein, whose letter I here subjoin, with the result that in two of the most powerfully developed professional athletes in London, the presence of this formation as a muscle in the human body was fully demonstrated. But the muscle appeared in this form, not when the athletes were in repose or general action, but only when the exact attitude of our torso was assumed by them. It was not even enough that the weight should be thrown on the bent left leg when the right leg was upraised, — to this had to be added the strain of pushing against an adversary with the upper body, as in our torso the combatant is pressing against the adversary whose hand is pressed against his side.

I cannot here dwell upon the interesting anatomical results of this observation. What it shows us in the first place is the careful observation of nature and the painstaking rendering of these observations in the art of modeling, — characteristics which the passages referred to in the Introduction emphasize as a leading feature in the art of Polycleitus. At the same time I cannot refrain from citing this as a striking confirmation of my exposition published some years ago, with regard to the influence of athletic games upon Greek art.[1] I there said:[2] "It was here [in the palaestra], with hundreds of nude youths, not only wrestling, jumping, and running, but endeavoring by systematic practice to remedy any defect or abnormality in any one limb or organ, that the artist day by day studied his anatomy of the human figure without the need of entering the dissecting-room or calling in the help of the anatomist."[3] I there pointed to the difference between the attitude of mind, observation, and creation of the ancient Greek and of modern artists in this respect. It must be regarded as a misfortune that the modern artist is dependent upon his one model, and receives his training as regards human structure from the anatomist.[4] On the contrary, the real "plastic anatomist" should in the future have to discard from his mind the reminiscences of the dissecting-room and should study the structure of the human figure — bones and muscles — in *action*, in their function, as the ancient Greek sculptor studied them.[5]

[1] See my *Essays on the Art of Pheidias*, pp. 394 ff., reprinted from the *Proceedings of the Royal Inst. of Great Britain*, 1883.

[2] Pp. 400 and 401.

[3] *Cf.* also bottom of p. 402 to p. 403; and pp. 406 and 407, where this point is further developed.

[4] It looks as if this had been the case in ancient Greek times only during the period of decline marked by the schools of Pergamon and Rhodes.

[5] FROM A LETTER OF LOUIS WALDSTEIN, M. D.

The striking round prominence in the left groin of the Argive torso suggests at once either an enlarged gland (*bubo*) or package of glands, or a rupture (*hernia*), because these are found exactly in that spot. But, for obvious reasons, both possibilities must be excluded from consideration, from the artistic as well as from the medical point of view.

The triangle, which is so well marked in the figure, is occupied also by the large blood vessels and the crural nerve, all of which, however, are found laterally from the prominence in question. There remain therefore to be considered only the muscles of that region. In order to bring them well into view the leg must be flexed in the knee, and must be fixed with unusual tension of all those groups of muscles that serve to fix the pelvis upon the thigh; the whole body must, in fact, rest upon the left leg. In this position the extensors along the front of the thigh bulge out, and the adductor group is well contracted, so that the triangle (Scarpa's) is clearly defined. It will be seen that the nodule in question is in no way connected with any of the muscles forming the triangle, but that it is clearly separated from its base and its median boundary: it must, therefore, proceed from that structure which forms the floor of the triangle. These are the Pectineus and Ilio-Psoas muscles, whose function it is either to flex the trunk upon the fixed thigh, or to draw up and inwards the thigh upon the trunk. Of these two functions the first only need be considered, since, in the figure, the leg is in a rigidly fixed position, all the more fixed as the right leg is raised, and as the other combatant is endeavoring to throw the entire weight of the body beyond the left leg.

Constructively and functionally, therefore, it is comparatively simple to explain the round swelling under consideration, and to see in it the forcibly contracted Pectineus muscle, a muscle which from its origin along the anterior ridge of the pubic bone to its insertion directly under the *trochanter minor* of the thighbone, is directed obliquely towards the back and side of the median line. It is this course that so sharply defines the form of the protuberance, for it corresponds only to the uppermost part of the muscle, which is alone near enough to the skin to appear thus clearly, while the remainder of the muscle gradually recedes more and more from the surface and is therefore hidden from view.

In the living subject the Pectineus seems to be feebly developed, for it could be seen but very slightly protruding in two powerfully developed athletes, while in other subjects no such indication of its functional power was produced. This proves, it would seem, that the exercises of the modern gymnast do not engage this group of muscles; for it must be said that the function of the Pectineus is not isolated, but will necessarily go together with the Iliacus and the Psoas muscles. They are chiefly brought into play in wrestling, — wrestling, moreover, of a particular kind, where the athlete contracts forcibly the muscles of the gluteal region as well; all that apparatus, in fact, that serves to fix the ball and socket joint and thereby unite as into one rigid pillar the leg and the pelvis. This enables the combatant to oppose with the utmost power the force of a pushing attack. It would appear as if the modern wrestler relies much more upon subtle agility than upon a concentration of pure muscular power. Such, at least, must be the inference drawn from the fact that the Greek artist reproduces a powerfully contracted muscle, which can hardly be found in the modern gymnast.

PLATE XXXV.

No. 1. *Torso of a Warrior with breastplate in high relief, from the Metopes.* Parian marble.

It is evident that this fragment belongs to the metopes, as it is of the same dimensions and workmanship and shows at the back a portion of the background of the metope, while the technique corresponds to that of the best specimens from the metopes, — those given on this Plate, as well as smaller fragments not given here. The fragment belonged to the figure of a warrior seen in full face, in violent action, the lower part of the body turning towards the left, while the upper part is turned towards the right; the right arm pressed over the breast towards the left shoulder. Though the warrior is protected by a breastplate reaching to the waist, we cannot be absolutely certain whether we have not here a female figure (an Amazon ?), as the drapery covering the thigh below the waist, and the rounded form which it covers, are suggestive of female garments and forms. Unfortunately, but very little remains of this figure, and the greater part of what does remain is in such a fragmentary condition that it does not help us towards further identification. The well-preserved portions are the lower part of the breastplate and the drapery below it from the waist to the upper part of the thigh. These portions, however, convey clearly the exquisiteness of artistic finish in the modeling of these metopes. The undergarment has evidently been massed together beneath the belt round the waist under the breastplate, and thus produces a succession of short, thickly massed folds, which have their analogy in the same arrangement (though on a slanting line downward) in No. 2 of this same plate. Below these thickly massed folds the undergarment of thin texture clings about the rounded forms of the thigh in very delicate folds that are indicated by slight flat ridges in relief — a method of indicating thin and pliant drapery covering rounded forms without interfering with the indication of the roundness in human, especially female, figures. This same method can be noted in the region of the thigh of No. 2 and of the right side of the waist in No. 3 on this same plate. It is the same system which is to be found in the drapery below the breasts of the large female torso from a pediment of this Temple, figured on PLATE XXXVII.

Dimensions: —

Extreme height	45. cm.
Extreme width	21.5
Extreme depth	27.5
Height of relief from background	14.5
From base of neck to belt	26.
From breast to back	19.5

No. 2. *Torso of a Female Figure, probably an Amazon, from the Metopes.* Parian marble.

The arrangement of the drapery in this lightly clad figure is typical of that worn by Amazons. The light and short undergarment is fastened above her right shoulder, and then falls in undulating curves over her right breast, leaving the whole left shoulder and breast bare. It is held firmly to the body by a broad belt or *zoné* round the waist. The baring of the left shoulder and breast is not purely accidental and momentary, inasmuch as the amount of drapery thus left free is on this side massed together under the belt. The consequence is that two strongly marked masses of drapery, accentuating pronounced cross-lines in the composition of the figure, run from her right shoulder and the right side of her waist, slanting downward in diagonal curves. These lines, besides giving graceful variety to the composition, also accentuate the attitude: namely, the bending of the upper part of the body backward to our right, while the lower part, with the right hip, is pressed upward towards our left. The Amazon may thus be in an attitude of retreat or avoidance of a blow coming from her right side above, or may be sinking down on her left knee in consequence of a wound. In the modeling the same exquisiteness in the treatment, both of the soft nude portions and of the folds in the garment, is maintained. The rippling larger mass of folds, as the edge of the garment seems to flow from the shoulder to the waist, marks that combination of firmness and crispness, together with softness, which among extant monuments we find in the Thalassa or the reclining Fate in the Parthenon pediment, or the Victories from the Niké balustrade. The thicker mass, running crosswise to the belt above it and below, though full of life and variety, is not carried through with quite the same skill, especially as the rounded mass above the belt bulges out without a proper suggestion of its continuation below the belt. The broader, flatter masses of drapery below these cross-folds suggest the rounded forms that they cover in the manner we have noted before, and have the same flat folds in relief, interspersed between the smooth masses, clearly suggesting the nature of the drapery, and still accentuating the rounded forms. The large species of dowel-hole cut in the side below the left shoulder I am unable to explain, — whether it served for the insertion of some object in the original statue of the metope, or for some subsequent repair, or for some use to which the fragment was put when destroyed.

Dimensions: —

Extreme height	48.5 cm.
Extreme width	27.
Extreme depth	23.
Height of relief	16.5
From base of neck to belt	14.5
From breast to back of outer side (*i. e.* from right nipple to block)	17.

No. 3. *Torso of a Draped Female Figure, probably an Amazon from the Metopes.* Parian marble.

This torso comes from a figure similar to the one just described, only that there is no belt round the waist. The thin undergarment is here also fastened over the right shoulder, and expands from this point in four relief folds over the right breast and towards the middle between the breasts, where it evidently meets a similar arrangement of folds from the left shoulder (no longer extant). These two masses of folds where they meet create, as is usual, the V-shape overlapping of drapery at some distance below the neck between the breasts. From this point downward, in well-marked wavy curves, the drapery falls down to the waist. Towards the right side and below these marked folds, there are traces of the same treatment, suggestive of thin drapery over rounded forms, which has been noted before. The modeling of this fragment of drapery is bold and firm and yet delicate, completely in keeping with the finished style as we have recognized it in these metopes from every aspect.

Dimensions: —

Breadth of fragment	25.6 cm.
Height of fragment	34.
Depth of fragment	15.
Breadth of torso below arms	17.

FRONTISPIECE AND PLATE XXXVI.

Four views of the Head of Hera, probably from the Western Pediment of the Temple. Parian marble. Life size.

Dimensions: —

Height of head	27. cm.
Breadth of head	19.7
Depth (depth of head, 22.7)	25.8
Breadth of face	13.2
Outer corner to outer corner of eyes	10.
Inner corner to inner corner of eyes	3.1
Length of nose	5.5
Breadth of nose (at nostrils)	3.6
Breadth of mouth	4.8
Breadth of eyes	3.7

This head has been fully described in my preliminary publication of 1892.[1] I have also referred at some length to the discussion arising out of that publication in the Introduction to the Sculpture in this volume.[2] It will be seen that though most authorities, headed by Collignon,[3] have accepted my identification, others, headed by Furtwängler,[4] have somewhat rashly ascribed it to Attic art. The head is on the whole in excellent preservation, though the left side, from its position in the earth, has been strongly corroded, and the whole of this side, as well as the tip of the nose, has been worn away. The lips have suffered in the same manner. In all other respects, however, we may consider this to be one of the most representative heads of the great period to which it belongs.

The head formed part of a female figure, probably draped, and, from extant indications, the whole figure must have borne characteristics of grandeur, if not of severity, in attitude and execution. It was evidently meant to be seen in full face from the front view, for, though the hair is modeled in ridges at the back as well as at the front, it is much less finished, unmistakably showing that the back was not meant to be seen. Moreover, the head is placed without any turn to right or left on the neck, which again must have risen at right angles between the shoulders; and this position alone would be expressive of a certain solemnity, nay, severity in the general attitude. The same character is preserved in the composition and modeling of this head in every phase of the work. In full face as well as in profile the outline and general build of the head present that square rectangular massiveness which we have found to constitute a leading characteristic in all our heads as well as in those commonly attributed to Polycleitus. This broad, simple, severe character is maintained in the general arrangement and elaboration of the hair, in the severe lines of forehead and brow, as well as in every feature of the face, — though in this larger work the finish and refinement of the modeling is blended with the breadth and moderation which stamp the head as a whole. Moreover, we must always remember when comparing the execution of this work, originally destined for marble, with that of other Polycleitan works, which are copies from original bronze or gold and ivory statues, that a certain softness and indefiniteness is a characteristic inherent in marble sculpture as such.[5] The squareness of general outline is most pronounced in the profile view, whereas in the front view this is slightly counteracted by the necessary protrusion of masses of hair on either

[1] See *Excavations*, etc. pp. 8-13, pls. iv. and v.
[2] See pp. 164 ff.
[3] *Hist. de la Sculpt. Grecque*, II. p. 168.
[4] *L. c.*
[5] We have noted this modification of style as affected by the technique of marble sculpture in Polycleitan heads in the treatment of the hair in our head of a youth from the metopes as compared with the Doryphorus and Diadumenus. *Cf.* pp. 169 ff.

side of the forehead. The scale of this deviation from squareness can be most readily appreciated when we compare in this respect the head of the Doryphorus with that of the Diadumenus, and finally arrive at the Amazon heads of Polycleitan type, in which this bulging out of the hair corresponds to that of our Hera. The hair was parted in the middle, the parting continuing behind the narrow *stephané* down the back of the head. From the middle of the forehead two masses of hair are combed to either side in a wavy line, and, covering the greater part of the ear,[1] are joined under the *stephané* above the back of the neck; while the mass of hair from either side of the parting behind these hangs in one thick coil down the back. A curious feature is the small braid-like line of curls which projects out of the central mass of hair between the *stephané* and the middle of the forehead. This curious feature is to be found in the Caryatids from the Erechtheum, and, as I have pointed out in the Introduction,[2] probably led to the singular misconception on the part of those who see Attic style in this head. The wavy mass of hair combed towards either side from the central parting covers the ears and allows only the lobes to be visible. Holes are drilled into these which evidently served to hold metal earrings. The line of demarcation between the hair and the forehead is firmly drawn in its arch-like outline in spite of the wavy contour of the hair, a feature which we have before noted in the metope heads on PLATE XXXII. The brow, too, is treated in broad simplicity without minute modeling and half-tones, herein also corresponding to the treatment of the metope heads on PLATE XXXII. The relation between the brow, the eyelids, and the orbs is very similar to the treatment of these metope heads, only that in this life-size head the working is more elaborate and the individual features more firmly cut. It is in the treatment of the eyebrow and the eyelid that the maker of this marble head betrays himself as being chiefly influenced by the firmer bronze technique traditional in his school.

In spite of the corrosion and the breaking away of the tip, the nose shows the same treatment that we have found in the metope heads and in heads attributed to Polycleitus. Unfortunately, these breakages give a wrong impression of the whole face, especially in the profile view. In the same way we must regret that the middle of the upper lip and the whole of its left side have been partly broken off or worn away. In spite of this, all the characteristics of Heraeum and Polycleitan heads that I have described in the treatment of these features are to be found in a marked manner in this Hera. The same is true of the lower lip and of the chin. At all events, I can hardly believe that we shall meet with a dissentient opinion conscientiously formed and honestly held in stating that if the Bologna head, supposed to be a reproduction of the Lemnian Athena, is characteristic of Attic art, then, in general character as well as detailed composition of the features and in modeling, this Argive head would be *contrasted* with it; whereas if the various heads, — that of the Doryphorus, the Diadumenus, the Amazons, and the so-called Bacchus head in the

[1] It has been maintained — though never, so far as I know, in print — that this head was of a far later date than the fifth century B. C., because it is held that in statues of the fifth and earlier centuries before our era the ear was not covered in this way, but was fully modeled. Apart from the fact that whoever would ascribe this work to a late origin proves himself to be utterly devoid of any appreciation of the broad difference of style in Greek art, the statement about the ear is flatly contradicted by the evidence of extant monuments. It is true that in heads of the Archaic period, notably on coins, the ear is generally completely modeled, even in an exaggerated form, where the hair ought to cover it. It may even be maintained that it was usual not to hide the ear in most heads during the earlier, and even the best, periods of Greek art. Still it will be well to ask ourselves the question, how many well-preserved, quite authentic heads, especially female heads with long hair, we have belonging to these early periods? Yet even among these it is well for us to realize that on our heads from the metopes of this very temple, such as the Amazon head, PLATE XXXI. No. 3, and two of the heads on PLATE XXXII., the lobe only is indicated, as in this head of Hera. Moreover, we find, even as early as the sculptures from the Temple of Zeus at Olympia, that the ears of Hippodamia are completely covered; that on the nymph in the metope of the Hesperides, as well as in the female head in the metope with Atlas, the ear is covered as in ours; that in the Parthenon Frieze the maidens as well as Hera have their ears partly covered, and that the same is the rule with the Amazons and other female figures from the Phigalian Frieze, while it is emphatically true of the Polycleitan Amazon. Even on coins approaching the date of our statue we meet with the same treatment, notably in those from Argos representing Hera, one of which (taken from Mionnet's casts, Gardner, *Types of Greek Coins*, pl. viii. 14) shows the earrings hanging from the lobe. And if we go further afield among coins, a glance at those of Terina with the nymph Terina, of Cephallenia with the head of Procris, of Rhegium and Croton with the long-haired Apollo, will forever dispel this absurd generalization which I have heard quoted as a chronological landmark by an archæologist of some reputation.

[2] Pp. 166 ff.

British Museum (which I have now identified with the Polycleitan Hera),[1] — if these represent the Argive work of the Polycleitan period, then this Hera shows most striking resemblances to it in every respect.

I have called this head Hera.[2] I fully admit that the identification of this head as Hera is far from being beyond all doubt, and if I continue to use the name of this goddess, I do not do this with any claim to dogmatic certainty. I only mean that among all possible designations this still appears to me the most likely. I do not see how any degree of probability attaches to the identification with Hebe. Even if the type of this goddess were fully established in well-identified specimens (which is assuredly not the case), I believe that the severe character and the indication of the age in our head would not correspond to the conception which, from other sources, we should form of this youthful attendant upon Hera. For though I do not see in this head any indication of a distinctly matronly character, it certainly suggests to me at once full maturity, stateliness, and grace. This very stateliness, together with the *stephané*, shows this head to be that of a divinity. In looking about the Greek divinities after Hera, there are three others to whom characteristics in this work might possibly apply: Aphrodite, Artemis, and Athena. This order marks my preference of identification. For Aphrodite the character and expression seem somewhat too severe, while the presence of the earrings and the general effect they must have produced seem to me to militate against the character of Artemis as well as of Athena. Finally, it might be maintained that this head may have belonged to one of the female figures of priestesses which, according to Pausanias (II. 17. 3), stood before the temple. Here, again, the absence of the veil and the presence of the earrings forbid such a supposition, and, moreover, the place where the head was found directly contradicts the assumption that it belonged to one of the statues placed in *front* of the temple. For the position of this head in the earth made it most probable that this was one of the few works which had remained on the spot where it had originally fallen. This spot was immediately in front of the western side of the temple, on a line with the stylobate. From the nature of this region at the west end of the temple, it seems highly improbable that statues were placed here on their bases; while the evidence from the numerous bases that were found still in the wide space in front of the temple at the east end shows that this was the region where statues were massed together, and not the back. The actual provenience of the head thus strongly confirms the view that the head belonged to a figure from the western pediment of the temple, from which it had fallen to the actual spot where good fortune enabled us to discover it in such excellent preservation, as one of the very few Greek heads of these, and one of the noblest from the fifth century B. C.

PLATE XXXVII.

Torso of a draped Female Figure, from the Pediments of the Temple. Parian marble.

As I have already stated in the Introduction,[3] this torso, which was excavated by Rangabé, certainly belonged to a pedimental figure. It is part of a life-size statue.

Dimensions: —

Breadth of fragment	41. cm.
Height of fragment	40.
Depth of fragment	33.5
Breast to breast	14.5
Width of upper arm at elbow	8.8
Extreme thickness of upper arm	9.2
Breadth of torso just below breast	24.

That it formed part of a pedimental figure is evident from the fact that, whereas the front is modeled with exquisite finish, the back is only roughly blocked out. This will readily be seen by comparing the front and side views given on the Plate. A hole is cut in the centre of the neck, which may either have been worked in later times, when the temple was destroyed and the statue

[1] *Journ. of Hellen. Stud.* 1901, pp. 30 ff.

[2] Furtwängler (*l. c.*) maintains that it is certainly not Hera, but probably Hebe.

[3] See p. 152.

broken, or may have been a dowel-hole to hold the head when it was originally made, or during subsequent repair. So, too, a hole on the right shoulder of the figure (clearly seen in the side view) either may have been made for purposes of repair, or may have served to fix some bronze object or ornament. There are also traces of drill-holes in the drapery about the waist and under the left armpit. If the drill was used for the purpose of elaborating the folds of drapery in the marble, it was only applied roughly to work away the material and was not meant to be seen. The projecting portions of the drapery at this point which would have hidden these traces of drill-work have been broken away. The drapery above the breasts is much corroded, while below these it is in comparatively good preservation and shows exquisite modeling. The figure was clad in a thin undergarment (*chiton*), while round the shoulders hung a thicker cloak (*himation*), the edges of which can still be seen above the breast; these, falling over the back, were massed under the left arm of the figure, falling in a curve over the forearm and the hand. Mention has already been made in the Introduction [1] of the delicate modeling of the folds in the thin undergarment as it covers the breasts, which this figure has in common with the torso from the metopes. The naturalism of this modeling forms a striking contrast to the greater severity in a head like that of our Hera. This contrast is the rule, and not the exception, in the sculpture of this period. It is not greater than that between the modeling of the youth's head on PLATE XXXI. and of the nude torso on PLATE XXXIV., all from the metopes of this temple. In respect to the softness and elaborateness in the modeling of the female figure and the fall of the thin drapery over it, we should place this torso half way between the reclining Fate or Thalassa from the eastern pediment of the Parthenon and the sandal-binding Niké from the Balustrade of the Temple of Niké Apterus. Our torso would well mark the intermediate stage of development in this respect between these two works, which would, moreover, correspond exactly to the date ascribed to the building of the Heraeum.

PLATE XXXVIII.

Nos. 1 and 2. *Two views of a Fragment of the draped portion of the Lower Leg, from a Figure in the round belonging to the Pediments, standing on a plinth.* Parian marble.

This interesting fragment of a draped figure, manifestly in violent motion, comes from a life-size statue, which evidently belonged to the pediments.

Dimensions: —

Extreme height from top of knee to bottom of plinth	55. cm.
Extreme width of base as extant	21.6
Extreme breadth of base (including drapery)	13.8
Extreme thickness of calf	9.7
Thickness of plinth at the highest point	9.

That this fragment belonged to a pedimental group is proved, not only by the fact that in marble and workmanship it corresponds to the numerous smaller fragments of drapery belonging to the same class of figures, which evidently formed part of a larger group (see Introduction to Sculpture, p. 152), but also by the fact that a figure in such violent motion could not have belonged to a single statue standing upon its base in the period of Greek art to which all these fragments belong. It might conceivably be a portion of a figure on a high pillar represented as floating through the air, such as the Niké of Paeonius at Olympia; but this Olympian figure was, if not unique, at all events not a common type of monument, nor is such a monument, which would probably have elicited a comment of Pausanias, mentioned by any ancient authority as being at the Heraeum. The figure was evidently hastening through the air, the wind driving the drapery over the leg into rounded folds behind. In all likelihood we here have a parallel to the Niké or Iris from the Parthenon pediments, figures which, on either side of the centre, appear to be communicating the news of the central scene to the seated or reclining figures at either angle of the pediment.[2] The bold curved lines of the sharply cut folds in this drapery illustrate the workmanship of the best period of Greek sculpture. Within these sharp ridges of curved folds there is again a fondness

[1] See pp. 157 and 187.

[2] See my *Essays on the Art of Pheidias*, p. 149.

for smooth, flat surfaces; while variety is given to these at the points where the drapery covers the rounded calf of the leg by the thinner flat relief folds, again showing the same system which we have noted in the torso (PLATE XXXVII.), and in the three draped fragments from the metopes (PLATE XXXV.). In fact, if we but remember the different dimensions, and the difference between a figure in the round and one in high relief, the workmanship in this fragment of drapery is quite the same as that of the fragment (PLATE XXXV. No. 3) which belongs to a metope in relief less than half the size of this pedimental statue. The pieces of undercut drapery that have been broken away behind and above the foot show, in both views here given, the use of the drill for the purpose of cutting away the unnecessary marble before the final finish. It will here be seen how several grooves remain, showing how the drill had been worked through behind the foot from either side.

Nos. 3 and 4. *Two views of a Fragment of Drapery covering portions of the Leg in a Female Figure from above the knee to above the ankle, from a Pediment.* Parian marble. This fragment, like Nos. 1 and 2, and for the same reasons there given, formed part of a pedimental statue. The figure itself was on the same scale.

Dimensions: —

Extreme height	68. cm.
Extreme width	60.
Thickness from middle of thigh	29.
From knee to beginning of ankle	35.
Extreme thickness of calf (inside fold)	11.3

Whereas the previous figure rapidly moving forward was evidently meant to be seen in profile, the statue to which this fragment belongs was probably seen in the front view and did not stand absolutely erect. At first sight it suggests the seated attitude as we know it from the Parthenon pediments; but the figure could not have been seated, as the knee, though slightly bent, is not sufficiently bent for that attitude. The drapery is massed in deeply cut thicker folds between the legs, converging in almost parallel lines below the knee to the middle of the ankle, and then falling in divergent lines over either ankle. As seen in this fragmentary condition, the close massing of these folds, when parallel, looks somewhat monotonous; but this effect was undoubtedly relieved by the variety above and below this point when the figure was complete. The actual carving of these folds is the same as in Nos. 1 and 2. Though the edges of the folds have been broken away, it will be seen that in the side view, No. 4, the work is not so careful and highly finished in the back as in the front, — which is a further indication that this was a pedimental figure. For an acroterium above or on the side of the pediment the dimensions of the figure are too large.

PLATES XXXIX., XL.

Additional Marble Fragments from the Metopes.

I have here given a number of additional fragments that certainly belonged to the metopes, but which cannot be further identified and do not require detailed comment. One of these is pieced together out of six separate fragments, and gives some notion of the arrangement of the metopes, especially with regard to the background and the upper part. The hole drilled through the background on the right-hand upper corner of PLATE XXXIX^{a}. is similar to that in PLATE XXX., and no doubt was the regular method of fixing these high relief slabs to the entablature. I have also (PLATE XL^{b}.) given fragments of legs from the metopes. There is also one arm vigorously drawn back, which held a shield. Among them are also the backs of two heads, one with a helmet (PLATE XL^{c}.).

PLATE XLI.

Additional Fragments of Drapery and Feet, probably from the Pediments.

I have here selected from the large mass of such fragments portions that seemed to me to have come from the pediments, since they belonged to larger figures worked in the round. These will further illustrate the style of the drapery, and their number will help to support our conclusion as

to the presence of such sculpture in the pediments. Of the larger feet here given (PLATE XLI[b].), several rest on plinths. The right foot on a plinth, covered with drapery over the instep, belonged to a life-size figure about the dimensions of the one to which the draped leg on PLATE XXXVIII. belonged. The varying thickness of the plinth ($5\frac{1}{2}$ cm. in front, $6\frac{1}{2}$ to 8 cm. in the back) makes it improbable that it belonged to an ordinary statue on a base. The foot, moreover, is tilted forward, resting chiefly upon the inside, and thus belonged to a statue in motion, the forward movement of which is further indicated by the curved direction of the folds in the drapery that covers the instep.

The other dimensions are: —

Length of fragment . . .	31.5 cm.
Extreme height (including plinth) .	20.
Depth	14.
Width of foot	9.3.



FIG. 90. — MISCELLANEOUS MARBLE FRAGMENTS FROM THE HERAEUM

There is the fragment of a wrist and hand holding a piece of flying drapery. This is probably from the pediments, and belonged to a figure in which the cloak, fluttering in the wind from the back, is held up by one end in the upraised hand, as is often the case with Nikés. There is also here a small fragment of what appears to have been a marble vase. There is no reason to believe that the fragment of drapery in broad, flat folds with well-preserved painted border of a maeander pattern, and below it spikes or rays, came from the pediments, while the other fragments probably did (Fig. 90).

PLATE XXX

METOPE FROM THE HERAEUM

THE ARGIVE HERAEUM

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PLATE XXX

THE ARGIVE HERAEUM

METOPE FROM THE HERAEUM

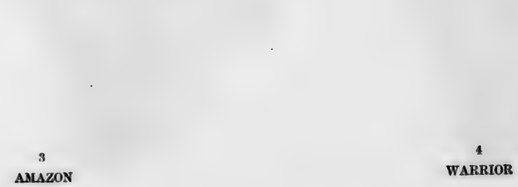




1
YOUTH (PROFILE)



2
YOUTH (FULL-FACE)



3
AMAZON



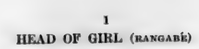
4
WARRIOR

THREE HEADS FROM THE METOPES





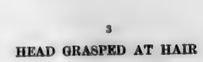




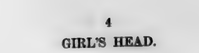
1
HEAD OF GIRL (RANGABÉ)



2
HEAD OF GIRL (RANGABÉ)



3
HEAD GRASPED AT HAIR



4
GIRL'S HEAD.

THREE FEMALE HEADS FROM THE METOPES









1 2

HEAD OF ATHENE FROM THE METOPES

3 4

LOWER PORTIONS OF LARGER HEADS IN THE ROUND

HEADS FROM THE HERAEUM





TORSO OF NUDE YOUTH FROM THE METOPES





1
WARRIOR

3
FEMALE

2
AMAZON

THREE DRAPED TORSOS FROM THE METOPES





THREE VIEWS OF HEAD OF HERA







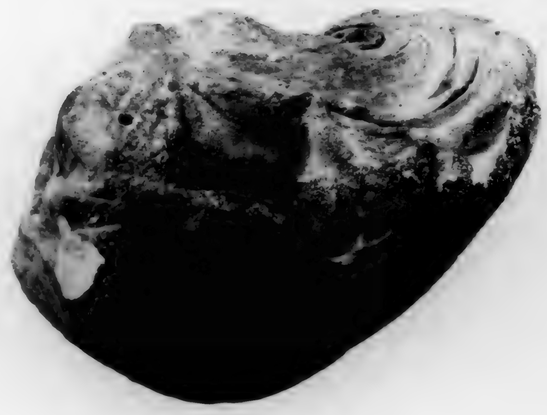




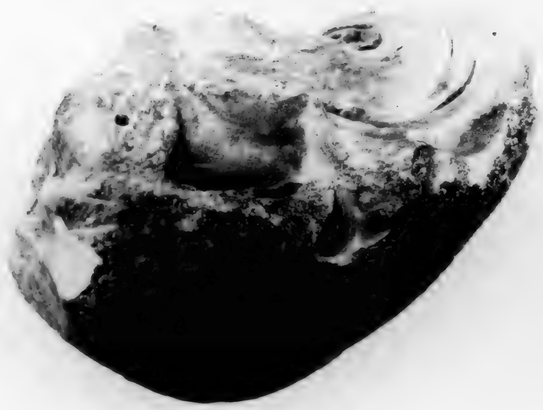


FEMALE TORSO FROM THE PEDIMENTS









1 2

LOWER PORTION OF LEG ON PLINTH

3 4

DRAPED THIGH AND LOWER LEG

FRAGMENTS OF DRAPERY FROM THE PEDIMENTS







PLATE XXXIX[a]



PLATE XXXIX[b]



PLATE XXXIX[c]



PLATE XXXIX[d]

MARBLE FRAGMENTS FROM METOPES



PLATE XXXIX[a]



PLATE XXXIX[b]



PLATE XXXIX[c]



PLATE XXXIX[d]

MARBLE FRAGMENTS FROM METOPES



PLATE XL[a]



PLATE XL[b]



PLATE XL[c]
MARBLE FRAGMENTS FROM METOPES



PLATE XL[a]



PLATE XL[b]



PLATE XL[c]
MARBLE FRAGMENTS FROM METOPES



PLATE XLI[a]



PLATE XLI[b]



PLATE XLI[c]

MARBLE FRAGMENTS FROM PEDIMENTS



PLATE XLI[a]



PLATE XLI[b]

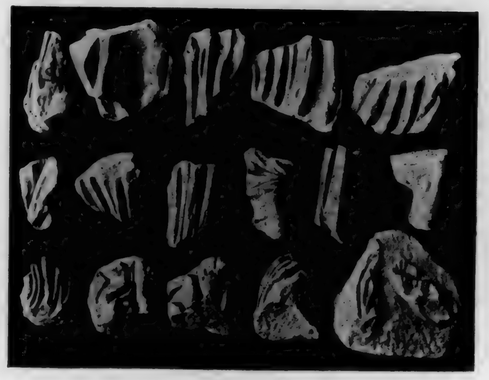


PLATE XLI[c]

MARBLE FRAGMENTS FROM PEDIMENTS

INSCRIPTIONS FROM THE ARGIVE HERAEUM

INSCRIPTIONS FROM THE ARGIVE HERAEUM[1]

PART FIRST

INSCRIPTIONS ON STONE

BY RUFUS BYAM RICHARDSON AND JAMES RIGNALL WHEELER

I.

On a *poros* block in a wall between the Second Temple and the West Building. The block has a face 1.22 m.×.32 m. It was uncovered in the spring of 1895.

Κλεόμαχος.

The letters are in general .10 m. high, but *omicron* is exceedingly small. This inscription is probably older than No. II. The three-stroke *sigma* alone would carry its date to about 500 B. C.[2] *Kappa* is the most striking letter in form. At first sight one hardly notices that the upright bar projects above and below its junction with the oblique bars, which do not meet each other. Only on closer notice the upright bar is seen to project slightly. The wide gap between the oblique bars might seem to be a Theran feature, as the inscription from Thera given in *I. G. A.* 454 (Roberts, *Introd. to Greek Epig.* No. 4[b]) has a form in this respect almost exactly parallel. But almost the same peculiarity occurs in the Nicandra inscription (*I. G. A.* 407), and in that on the Apollo base at Delos (*I. G. A.* 409). In fact, we have almost a parallel at Argos itself in *I. G. A.* 31.

II.

This inscription holds the first place in importance among all the inscriptions on stone hitherto found at the Heraeum, both because it is one of the oldest and because it is so preserved that it may be read entirely. It is cut in a massive block of limestone which formed the upper part of the *stele*, the shape of which is shown in the cut. Its dimensions are: thickness, .28 m.; height, from apex to the break at the bottom, .44 m.; height at right side, .37 m.; at left, .34 m.; breadth, .39 m. Below the inscription there is a rectangular depression .22 m. wide and .005 m. deep. The letters vary in

[1] The Inscriptions here discussed were, with a single exception (No. I.), transported to Athens during or at the close of the excavations, and are now in the National Museum. The block upon which No. I. is cut was too large to be removed.

Nos. III.–V., VII.–X., and XV.–XVIII., were first published by Professor Wheeler, in the *American Journal of Archaeology*, First Series, vol. IX. (1894), pp. 351 ff., and the remainder by me in the same periodical, First Series, vol. XI. (1896), pp. 42 ff., where I also published, in vol. IX. (1894), pp. 340 ff., the Stamped Tiles. (These articles are republished in the *Papers of the American School of Classical Studies at Athens*, vol. VI. pp. 272 ff., 261 ff., 299 ff.) In the present publication the order of the Inscriptions on Stone is approximately chronological, although the criteria are not in every case infallible. Otherwise little change has been made in the first form of publication.

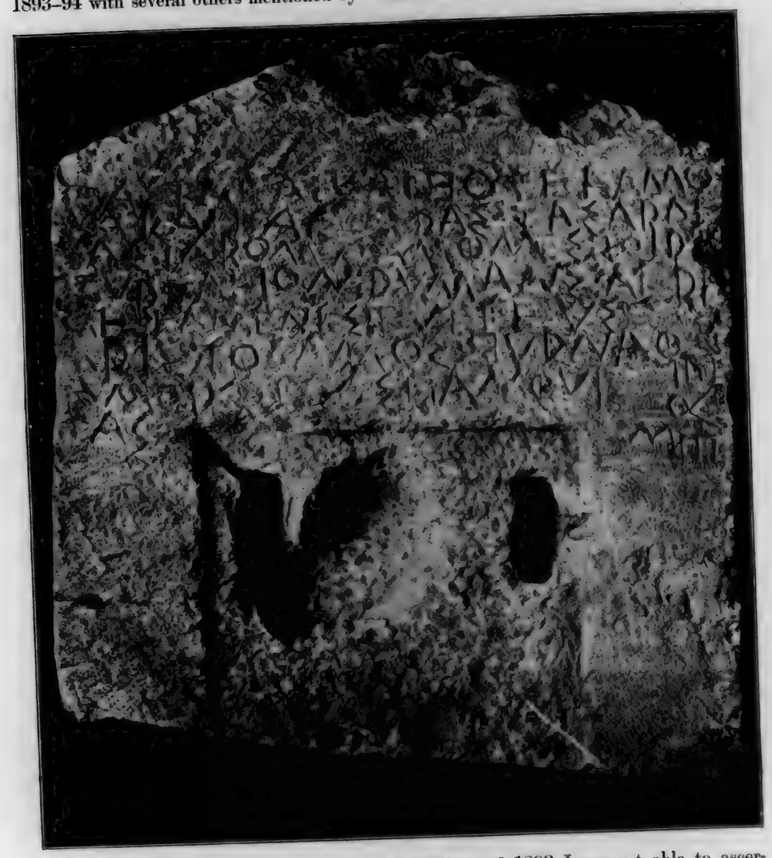
The Inscriptions on Bronze (including the important archaic bronze tablet, first published by Dr. James Dennison Rogers in the *American Journal of Archaeology*, Second Series, vol. V. [1901], pp. 159 ff.) are published by Mr. De Cou in the second volume, under Bronzes. Inscribed vases are published by Mr. Heermance in the same volume, in the chapter on Vases.

I wish to make acknowledgment here of the kindness of Professor Max Fränkel of Berlin, who sent me advance sheets of his *Corpus Inscriptionum Graecarum Peloponnesiacarum* (*C. I. G. P.*), in which he has treated the inscriptions from the Heraeum. In Nos. II. and XIV. I have especially profited by his suggestions. — R. B. RICHARDSON.

[2] It would fall into Roberts's (*Introd. to Greek Epig.* p. 117) "second period of Argive inscriptions."

height from .012 m. to .02 m. There is great irregularity in the spacing of the letters. The irregularity of turning lines 4 and 6 down at the ends is probably accounted for by the desire to begin the following lines with a new name.

The stone was brought to the Central Museum from the Heraeum in the winter of 1893–94 with several others mentioned by Professor Wheeler as lying at the Heraeum.



Whether it was found in the excavations of 1892 or of 1893 I am not able to ascertain. Professor Wheeler did not see it when he examined the inscriptions in the spring of 1893.

The surface of the stone is slightly chipped at both edges. Room is found in this battered space for Ⲏ at the beginning of line 1, but at the end there is no room for the N which might be expected. Neither can this N find a place at the beginning of line 2,

where there is only room for ι. The rough breathing Ⲏ was apparently not used before *ἱαρός* as is seen by the clear case of *ἱαρομνάμονες*, line 3.[1] At the beginning of line 3, ι must have been crowded in, since the diphthong is used in the very oldest inscriptions.[2] In line 4 the first letter must be Π, since there is no trace of a cross-bar for Ⲏ, which



]α στάλα ⋮ καὶ ὁ τελαμὼ
ἱ]αρὰ [τ]ᾶς [Ϝ]ρας ⋮ τᾶς Ἀργε-
[ί]ας ⋮ ἱαρομνάμονες ⋮ τοίδε·
Πυρϝαλίων ⋮ Δύμανς . . . ἀϝρήτενε,
Ἀλκαμένης ⋮ Ὑλλεύς,
Ἀριστόδαμος ⋮ Ὑρνάθιος,
Ἀμφίκριτος ⋮ Παυφύλ-
ας

would be the only alternative. The surface of the stone where such a bar would fall is perfectly preserved. The fourth letter is almost certainly F, as the surface is smooth where the right-hand limb of a Π would naturally appear.[3] Furthermore, if such a limb had had the length which it has in *Παυφύλας*, line 7, it would have run into the A immediately below it. *Πυρϝαλίων* is probably a diminutive from *πυραλίς*, a kind of bird, which in Hesychius is written *πυρραλίς* where the second *rho* seems to point to an original *digamma*.

There are many interesting peculiarities of form in the letters of the inscription. The most striking is the second *omicron* of *ἱαρομνάμονες*, line 3.[4] It is evident at a glance that even apart from this *omicron*, which is probably an accident, we have an inscription venerable for its antiquity. E=*η*, o=*ω*, ⊢=*λ*, indeed run on in Argos to the end of the fifth century. But we find beside these usages 0=*δ*, ᖇ=*ρ*, V=*υ*, Ⓘ=*φ*, Ⲏ=rough breath-

[1] For *ἱαρός* as *φιλός* in Doric, see Ahrens, *Dial. Dor.* § 4. 3.

[2] *I. G. A.* 33, 42.

[3] The only other possibility, since *gamma* has the form ᐱ, line 2.

[4] This would pass without question for a simple error of the stone-cutter, but for the fact that an inscription connected with the frieze of the treasury of the Cnidians at Delphi, which probably belongs to the sixth century B. C., has two and perhaps three omicrons, crossed in the same way. *B. C. H.* XIX. (1895), p. 537. M. Homolle, who had already pronounced in favor of an Argive artist for this frieze on the ground of the Argive *lambda* in the inscription, was inclined (*B. C. H.* XX. [1896], p. 599 f.) to see in this crossed *omicron* of our inscription a corroboration of his view. But since a careful scrutiny of all the other *omicrons* of our inscription fails to discover any cross marks, the interpretation of this one case as the survival of an Argive peculiarity seems precarious. Professor Fränkel, however, in his copy (*C. I. G. P.* 517), which is here reproduced, finds traces of these cross marks in the O at the end of the line.

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Ἀριστόδαμος : Ὑρνάθιος,
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ing, the *digamma*, and perhaps, more important than all these, the punctuation of the words with three dots in perpendicular lines.[1] It may be added that M and N show very oblique lines in place of the later perpendicular ones. In the former letter the middle lines in several cases fail to meet at the bottom. *Alpha* also, which in the main looks tolerably late, has in one or two cases the cross-bar quite far from horizontal. Forms like Δύμανς,[2] also, and Παυφύλας[3] look old. In view of all these features, it would seem rash to put our inscription much, if any, later than 500 B. C.

The dialect is Argive Doric, pure and simple. The names Alcamenes and Aristodamus have also a good Doric ring to them.

The contents of the inscription is a list of four Hieromnemons, one from each tribe, the name of which is appended. Ἱερομνήμονες was the usual name for the board having charge of temple affairs, not merely at Delphi, where the usage is perhaps best known, but in many other places as well. For the Heraeum it is seen also in VII., IX., and XIV. The inscription is interesting as affording almost the earliest mention of the names of the four Doric tribes.[4] These are sufficiently well attested in later times for Argos and for various Doric communities connected with Argos.[5] The editors of the inscription in the *Bulletin de Correspondance Hellénique*, vol. IX. p. 350, remark: "Jusqu' ici les inscriptions du Péloponnèse qui donnaient les noms des tribus argiennes dataient toutes de l'époque impériale; il y a quelque intérêt à les retrouver dans un document qui remonte, selon toute vraisemblance au IIIme siècle avant notre ère." But our inscription is at least two centuries older than the one in question.

The Hyrnethians are not so frequently mentioned as the other three tribes, and are regarded as a later addition to these original three tribes,[6] the name indicating perhaps an incorporation of a non-Doric element[7] into the community, a fact which was concealed under the myth of Hyrnetho, the daughter of Temenus, marrying Deiphontes. But the addition of the Hyrnethians cannot have been very late, for our inscription shows them in such good and regular standing that they are not even relegated to the last place in the catalogue, as is the case in the inscription just mentioned.

To the name of the Hieromnemon who is mentioned first is appended the word ἀρρήτευε. By good fortune this very word, without the *digamma*, is preserved in Le Bas, *Voyage Archéologique*, No. 1, of the inscriptions from Asia Minor (*S. G. D.* 3277).[8] The passage runs as follows: ἀρήτευε Λέων βωλᾶς σευτέρας. Le Bas translates: "Était

[1] We have become accustomed to find this method of punctuation in some of the very oldest pieces which are well known, *e. g.* Röhl, *I. G. A.* Nos. 5, 37, 41, 42 (the last three from Argos), 68, 119 (Olympia bronzes), 321, 322 (Galaxidhi bronzes).

[2] Ahrens, *Dial. Dor.* § 14, puts this retention of the combination ντ as a peculiarity of Argos and Crete. Τίρυνς is an instance of its survival to the present time (*cf.* Kühner-Blass, *Grammatik*, I. p. 257).

[3] In the Argive inscription given by Foucart in Le Bas, *Péloponnèse*, No. 116b, ἁ φυλὰ τῶν Παμφυλᾶν (Foucart, Παμφύλαν), we have this form instead of the later form in ον. Unless all single signs of age in alphabetic forms are illusive, our inscription must be at the very least half a century earlier than the one published by Le Bas, *Voyage Archéologique*, II. 3[1], No. 1, and assigned to 417 B. C. Of this we shall speak later.

[4] The Hylleis are mentioned in the earlier bronze tablet, *Amer. Journ. Arch.* VI. (1901), pp. 161 ff.

[5] Gilbert, *Griech. Staatsalter.* II. p. 77, and the references there given. Also *B. C. H.* IX. p. 350; V. p. 217 (Cos); VIII. p. 29 (Calymnus).

[6] Steph. Byz. *s. v.* Δυμᾶν: — φυλὴ Δωριέων· ἦσαν δὲ τρεῖς, Ὑλλεῖς καὶ Πάμφυλοι καὶ Δυμᾶνες ἐξ Ἡρακλείους, καὶ προσετέθη ἡ Ὑρνηθία ὑπ' Ἔφορος δ. It is worth noting that in the inscription given in Kabbadias, *Fouilles d'Épidaure*, No. 234, of the latter part of the third century, in a list of 151 Megarian names, only Hylleis, Pamphyli, and Dymanes appear. Perhaps the Hyrnethii had not been added in Megara. The old triple division appears in Herod. V. 68. Some would find it also in Δωριῆες τριχάϊκες, Hom. *Od.* xix. 177.

[7] Roscher, *Lex. Myth.* p. 982.

[8] This inscription from Smyrna, which records a favorable verdict of the Argives for the Cimolians in an arbitration between them and the Melians, may have been transported from Cimolus by some ship carrying Cimolian earth to Smyrna. See Le Bas, *ibid.*

prêtre du second sénat," and adds the following comment: "Ἀρήτευε, qui, bien qu'il manque dans tous les lexiques, se déduit très-bien du même radical qu' ἀρητήρ et ἀρήτειρα, regardés tous deux jusqu'ici comme exclusivement usités dans le dialecte ionien."[1]

In an inscription of the Hellenistic period from Mycenae, published by Tsountas in the Ἐφημερὶς Ἀρχαιολογική, 1887, p. 156, lines 4 and 5, are given ἀρίστευε δαμιοργῶν Δελφίων. The face of the stone is very much defaced, so that certainty is hardly attainable, but Tsountas is now convinced that the real reading is not ἀρίστευε but ἀρήτευε. The *eta* is, to be sure, in this case very broad. Dr. A. Wilhelm, who decides that this alone can be the reading, reinforces it by the consideration that in the prescript of another edict published with this one, we have ἀρητ, which can be restored only as ἀρήτευε.

In all these instances one is tempted to connect the word with the stem ϝρε,[2] and make it designate the 'speaker,' or in other words the chairman of a board. We may then think of Pyralion as the president of the board of Hieromnemons.

The word τελαμών or τελαμώ, line 1, is difficult of explanation. We have come to associate the word with Caryatids and Atlantes, but it is almost certain that this association will not hold here. We shall probably come to the proper explanation by taking as our starting-point an inscription from Varna (*C. I. G.* II. 2056), at the end of which the following provision is made: τὸν δὲ ἱεροποιὸν ἀναγράψαι τὸ ψήφισμα τοῦτο εἰς τελαμῶνα, καὶ θεῖναι εἰς τὸ ἱερόν. With this may be associated another from Mesambria (*C. I. G.* 2053[b]), which closes with a like provision: τὸν δὲ ταμίαν ἀναγράψαντα τὸ ψήφισμα τοῦτο εἰς τελαμῶνα λευκοῦ λίθου ἀναθέμεν εἰς τὸ ἱερὸν τοῦ Ἀπόλλωνος. One can hardly hesitate to say that τελαμών here appears to be the equivalent in Thrace for στήλη in Attica, where the latter word occurs constantly in the phrase prescribing the setting up of inscriptions, a phrase which except for this difference is exactly the same as in the two inscriptions cited. But our inscription mentions στήλη *and* τελαμών as two separate things, so that we have not yet arrived at a complete explanation. The case seems at first sight to be complicated somewhat by a third inscription from the same region as the first, and now preserved in the Museum at Odessa (*C. I. G.* 2056[d]), where the phrase is: [ἀναγράψαι εἰς σ]τήλην λευκοῦ λίθου [καὶ] ἀνα[θεῖναι αὐτὴν ἐπὶ τελα]μῶνος. The inscription then proceeds to speak of [τὸ ἀνάλωμα εἰς τὴν] ἀνάθεσιν τοῦ τελαμῶνος.[3] It is this inscription which leads us to the light. Τελαμών is restored to its function as a support in a way which fits our inscription very well. In regions where marble was scarce, one may well suppose that an inscribed marble *stele* might be inserted into a larger local stone, which might then not inaptly be called a τελαμών. It must be conceded that *C. I. G.* 2053[b], where the τελαμών itself is of marble, affords difficulty. But it may be that even with the origin of the word τελαμών as here proposed, the two words came to be used in some quarters interchangeably.

It will be seen by the cut, p. 198, that something was inserted in our massive block. There are dowel-holes on the right and the left at the top of the rectangular depression, to which probably two others at the bottom, now broken off, corresponded. The one at the left measures .07 m. × .02 m., the one at the right .06 m. × .02 m.; both about .03 m. deep. These probably served to receive metallic dowels, inasmuch as they are provided with little channels for pouring in the lead when the inserted object was *in situ*, the channel on the left running obliquely to the upper corner of the depression, and that at the right

[1] *Voyage Arch.* II. 3[2], p. 6.

[2] *Cf.* ῥήτρα, *I. G. A.* Nos. 110, 112.

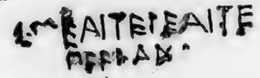
[3] There seems to be no reasonable doubt that the readings given are correct, although much has been restored.

running horizontally to the edge of the depression. Besides the dowel-holes there is an equally deep irregularly round hole about .12 m.×.07 m., which may have served also to hold some strengthening dowel. That the insertion was original, and not connected with some subsequent use of the block, is proved by the fact that the lines of the inscription are shaped with regard to it, coming in around it to the right and to the left. The object inserted cannot have been a statue, nor a *stele* to which this block served as a horizontal base, for in that case this inscription would have been hidden from view, except to one standing so as to read it sideways or bottom upwards. Probably we have the τελαμών into which was inserted a *stele* either of marble or bronze with an inscription of greater length and importance than the one which we have here. This served merely as a heading to the real contents of the inscription. It should be noted that at Argos marble was not at hand, and that most of the inscriptions found there were cut in the local limestone, which was a most unsatisfactory material. The veins of the stone and the cracks which come with age make the reading of these inscriptions an exceedingly difficult task.[1] In this case, even at a very early date, a good piece of marble may have been imported for an important inscription.

III.

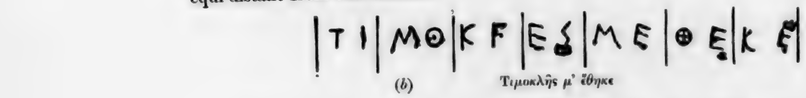
Inscribed on a small Doric capital and on a portion of its column found in the West Building (*cf.* Waldstein, *Twelfth Annual Report* of the American School, p. 34), near the third base of the inner row of columns, counting from the south (excavator's note). Diameter of column, 1 ft.; height of echinus, 4 in.; width of abacus, 1 ft. 9 in.; height of abacus, 4 in.; height of letters, about .8 in.

(*a*) is inscribed on the abacus and is difficult to read, owing to the damaged state of the surface of the stone. Professor Tarbell was the first to read line 1, but the defective squeeze which he used did not show the letters in line 2. It is possible that the letters ΤΘΡΙ should be read before Π in line 2. This reading is due to Fränkel, *C. I. G. P.* 510, who restores Κλεί]τορι.



(*a*) ἐν Νε]μέαι Τεγέαι τε ⏑–⏑⏑–⏑⏑––
τορι Πελλάν[α . . .

(*b*) is inscribed on the column, there being two letters in each flute, as is shown in the facsimile. The uneven stretching of the squeeze has caused the lines to appear not quite equi-distant from one another.



(*b*) Τιμοκλῆς μ' ἔθηκε

(*a*) shows clearly that the inscription is the dedication of some object by a victor in games (*cf.* Furtwängler, *Athen. Mittheil.* V. pp. 30 and 31, note 2). Similar inscriptions are quoted by Pausanias in his account of Olympia, and the excavations there have yielded some of the same class (*cf. Arch. Zeit.* 1876–1878; *Olympia*, V.). The following numbers from the Anthology may also be cited for comparison: xiii. 5, 8, 14, 15, 16, 18, 19; xvi. (Planudea), 23, 24; vol. III. (Firmin-Didot), i. 23, 24, 30, 44, 50, 82, 89, 102, 106, 291; *Addenda* to vol. III. i. 86 b. Fränkel, *l. c.*, makes an interesting conjecture, which would bring this inscription into connection with the house of Theaeus of Argos, celebrated by Pindar in his tenth Nemean ode.

[1] No. XIV. is a good example of this difficulty of reading, although the surface is not badly broken.

IV.

Found between the bases of the inner row of columns in the North Stoa (II, on the Plan, Fig. 2, p. 9) and on a level with them, at a point about one third of the length of the stoa, measured from the west end. The inscription is on a marble block measuring 10 in. by 10 in. by 3.6 in. The letters are about .7 in. in height. There is a round hole in the top of the block 1.6 in. in diameter. Of the name of the former dedicator of the two only a single upright bar of one letter is preserved.



Ηυβρίλας
ἀνεθέταν

The name Hybrilas is found in a list of Proxeni, *Bull. Corr. Hell.* 1891, p. 412, line 10 of the inscription, and in Bazin, *Archiv. de Miss. Scient.* II. 369. On the suffix -λας see Fick, *Griech. Personennamen*, p. 123, and Pape-Benseler, *Lex.* p. xxx.

The really important feature in this inscription is the form ⊏ = Β. With the exception of a bronze plaque said to be from Hermione, but apparently of doubtful provenience, the Argive inscriptions of early date give but one example of the letter Β. This occurs in the proper name Βορθαγόρας, which with others is inscribed on a stone that is built into the foundation of the eastern tower of the ruined castle on the Larisa at Argos (*cf. I. A. G.* 30 = *Dialekt-Inschriften*, 3260 = Roberts, *Greek Epig.* 73). Here our copies give the form .

The plaque from Hermione has been published by Fröhner in the *Revue Archéologique* for 1891, II. pp. 50 ff., and, with extended comment, by Robert in the *Monumenti Antichi*, 1891, pp. 593 ff. Here *beta* occurs twice (lines 2, 6) in the word ⊏●⊢Α. It should be observed that the upper lateral stroke is not at right angles with the vertical stroke, as is the case with the example from the Heraeum. There is, however, no essential difference in the forms. If the bronze plaque is not Argive, but represents a form of the alphabet in use at Hermione, we must suppose, as Fröhner has pointed out, that there existed there almost simultaneously two forms of the early alphabet, that of Argos (note the letter ⊢ on the bronze plaque), and a form closely allied to the Lacedaemonian (*cf.* Roberts, p. 284, and Kirchhoff, *Studien*,[4] p. 160). It is more probable that the plaque is of immediate Argive origin, and this view, to which both Fröhner and Robert incline, is now shown to be almost certainly the correct one by the inscription from the Heraeum. The resemblance of this form of *beta* to that of the letter in several of the insular alphabets (C) and in the alphabet of Megara (⌐) has been remarked by Robert, *l. c.*

V.

Inscribed on a white fine-grained limestone, which splits with conchoidal fracture. Found in the North Stoa, between the back wall and the inner row of columns. Six irregularly broken fragments of the stone have been found, five of which may readily be fitted together. These measure roughly 1 ft. by 8 in., the sixth fragment 3 in. by 1 in. The height of the letters is .4 in.

(*a*) Fragments 1–5.



. . . ον
. . . ριτον

. . . τα ⁞ ΓΓΓΓΓ
. . . ωναυων ⁞ ΓΓΓΓΓ

. . . ιμετρον ⁞ Η ⁞ τιμά ⁞ ΓΟΟΟΟ

. . . τρος
. . . αδ . . .

(*b*) Fragment 6.

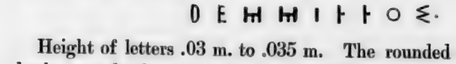
. . . ανκ . . .

The inscription is extremely well cut, and the surface of the stone in excellent condition, so that the failure to discover more fragments is peculiarly to be regretted. It seems to have been an account of moneys paid out, possibly for building materials. We might restore *ξύλων αὖων* in line 4, but the inscription is so broken away at the left that conjectural restorations are not worth much. One Argive inscription gives Η = 100, Γ = 50, Ο = 10, *cf.* Reinach, *Traité d'Épigraphie grecque*, p. 218; Dittenberger, *Hermes*, VII. p. 62 ff., comments on the inscription, which is also published as No. 3286 in the *Dialekt-Inschriften*; *cf.* Larfeld in Müller's *Handbuch*, I². pp. 541 ff. Perhaps, however, Ο = *omicron*, as in other portions of the inscription, and signifies an obol. But how are we to read Γ? If it means five or fifty drachmas in line 5, its repetition up to five places would surely be most unusual. Professor F. D. Allen suggested that it may be used to designate a coin of given value (*cf.* Reinach, *Traité*, p. 217, and note 3). Professor Allen also suggested the reading *ὠνὰ ὑῶν* in line 4, thus connecting the inscription with the purchase of sacrificial animals. Compare the sacrificial calendar from Cos, *J. H. S.* IX. pp. 323 ff., published also in Paton's Corpus of Coan Inscriptions. Line 5, however, seems rather to suggest the purchase of building materials. We might perhaps imagine in line 5 something that had a *περίμετρον* (*δίμετρον* or *τρίμετρον* seems difficult, since it involves the use of *μέτρον* as a linear unit) of 100, and in line 3 the . . . *τα* might belong to some such expression as *τοῖ τὰ διαστύλων θυρώμα-τα* (*cf.* lines 63–64 of the Epidaurean temple-inscription). This inscription is Fränkel's *C. I. G. P.*

No. 523, and his commentary should be noted. He would interpret the Η after *-ιμετρον* as *ἡ(μίπλεθρον)*.

VI.

On a limestone tripod-base, found near the north wall of the West Building, with a diameter of .50 m. and a height of .41 m. The top surface shows four dowel-holes, a large square one in the centre, and three smaller rectangular ones for the legs, at distances of .23 m. apart.

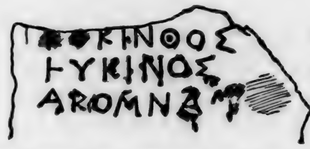


Δέξιλλος.

Height of letters .03 m. to .035 m. The rounded *delta* throws this inscription also back towards the beginning of the fifth century. But its chief interest lies in the doubling of the *xi*. This is paralleled by the Boeotian *Δέξξιππος*, Röhl, *I. G. A.* 150, and *Δεξξίππα*, *C. I. G.* 1608, line 6.[1] The turning of *xi* on its side seems to be an Argive peculiarity.[2] It appears also on the inscription over the Cleonaeans who fell in the battle of Tanagra: *C. I. A.* I. 441. The cutting off of the upper half of the middle bar is, so far as I know, without precedent.

VII.

Found just to the south of the West Building among some architectural fragments. Inscribed on an irregularly broken fragment 1 ft. by 8 in. in size. The height of the letters is about .5 in. In the museum at Argos.

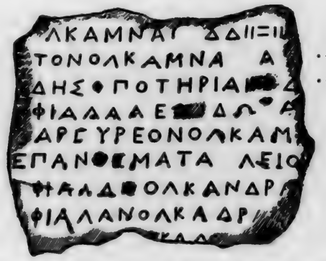


Κόρινθος
Λυκῖνος
i]αρομνάμ[ονες

Possibly the stone formed the upper part of a *stele*.

VIII.

This inscription is described as having come to light "on the surface of the south side." The stone measures 5 in. by 6 in., and is broken on all sides. The letters are not deeply cut and the squeeze is difficult to read. The height of the letters is about .3 in.



δ]λκὰ μναῖ ΔΔΙΙ=ΙΙ
. . . τον ὁλκὰ μνᾶ α . . .
. . . δης ποτήρια κ (?) . δ . . .
φιάλα δ' Ἐπιδα[τ]α
ἀργύρεον ὁλκὰ μ[ναῖ (?)
ἐπανθέματα λεῖο .
φιάλαν ὁλκὰν δρα[χμαί (?)
φιάλαν ὁλκὰ δρα[χμαί (?)
ὁλ]κὰ δ[ραχμαί (?)
λε[ία] δω . α . . .

[1] For other cases of gemination, see G. Meyer, *Gr. Gram.* § 227.

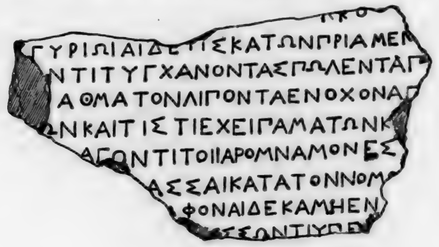
[2] Roberts, *Introd. to Greek Epigraphy*, No. 77.

Fränkel's reading, *C. I. G. P.* 526, in line 4, φιαλα ἀ Ἐπιδώ[τ]α, I believe to be right. My squeeze appears to show the τ, which I failed to observe before. His Κ[υ]δ[ώνια in line 3 also seems probable.

The fragment is evidently part of an inventory of valuable objects which were stored in the temple or in some other building of the sanctuary. In line 1 the value of some object seems to be 22 minae, and perhaps 20 drachmas 2 obols; that is, if we may understand — = 10 dr. and ⏐ = 1 obol, as in the inscription which relates to the construction of the temple of Asclepius at Epidaurus. Lines 7 and 8, however, show that the word drachma was given in full, at any rate in the case of lesser values. The space preceding the A which stands at the end of line 2 shows no trace of any letter. It would seem, then, as if the value indicated were a single mina, unless A may possibly be taken as a numeral. It is so used apparently in line 106 of the architectural inscription of the temple at Epidaurus already referred to; but, so far as I know, the letter has never been interpreted there, and it is of no help in understanding the present inscription. The A rather suggests ἀνέθηκε or ἀνάθεμα in this place (*cf.* the records of the temple of Apollo at Delos, *passim*, Dittenberger, *Syllogē*², 588). The termination -δης looks like the ending of a dedicator's name, but unfortunately there is no means of determining how much has been broken off at the beginning or ending of the lines. In line 3 we might expect a word expressing an attribute of ποτήρια (*e. g.* κέδρινα, which, however, is hardly possible, or Κυδώνια (Fränkel)). In line 6 the compound ἐπανθέματα is, so far as I know, new, if we are to take it as signifying dedicated offerings. The use of the accusative φιάλαν in lines 6 and 7 has a parallel in lines 68 ff. of the records of the temple at Delos.

IX.

An irregular fragment, broken on all sides, measuring 1 ft. 6 in. Height of letters about .4 in. I can give no note as to the exact spot where this inscription was found.



. . . νκο . . .
ἀρ]γυρίῳ· αἰ δέ τίς κα τῶν πριαμέν[ων
. . . ντι τυγχάνοντας πωλὲν τὰ π . . .
στ]αθμὰ τὸν λιπόντα ἔνοχον ἀπ[οτῖσαι
. . . ων καὶ τίς τι ἔχει παμάτων κ . . .
ἄγωντι τοὶ ἰαρομνάμονες
δικ]άσσαι κατὰ τὸν νόμο[ν ο . . .
ἀδε]λφόν· αἰ δέ κα μὴ ἐν . . .
δικά]σσωντι ὑπὲ[ρ

Enough is left of this document to make the conjecture probable that it is a portion of a record of certain specifications touching the sale or lease of some piece of property. The ἱερομνάμονες, line 6, whom several of the inscriptions from the Heraeum mention (see Nos. II., VII., XIV.), were doubtless the board which had charge of the negotiations. The restoration δικάσσαι, in line 7, was suggested by Professor F. D. Allen. That in line 9 seems to follow from it. Noteworthy is the uncommon word παμάτων in line 5. We have τἀππάματα (τὰ ἐππάματα) in *Dialekt-Inschriften*, 488, lines 163–175. Compare ἔππασις (Index to *Dialekt-Inschriften*, Boötien), and the interesting compound παματοφαγεῖσται (*I. G. A.* 321, lines 42, 45 = *Dialekt-Inschriften*, 1478), also the Homeric πολυπάμων and Hesychius's ἐμπάμων. The simple word πᾶμα has a rare literary use. (See the Thesaurus, *s. v.*) In line 8 Frankel, *C. I. G. P.* 521, would restore ἔγγρα]φον.

X.

Inscribed on an irregularly broken fragment found just above the eastern wall of the West Building. The stone measures about 1 ft. 5 in. in height, 1 ft. 1 in. in width at the widest part, and 7 in. in thickness. The top, which is roughly hewn, has two small holes in it, 2 in. by 2 in., and 1 in. in depth. Except at the top the stone is broken off on all sides. The letters are from .6 to .8 in. in height.



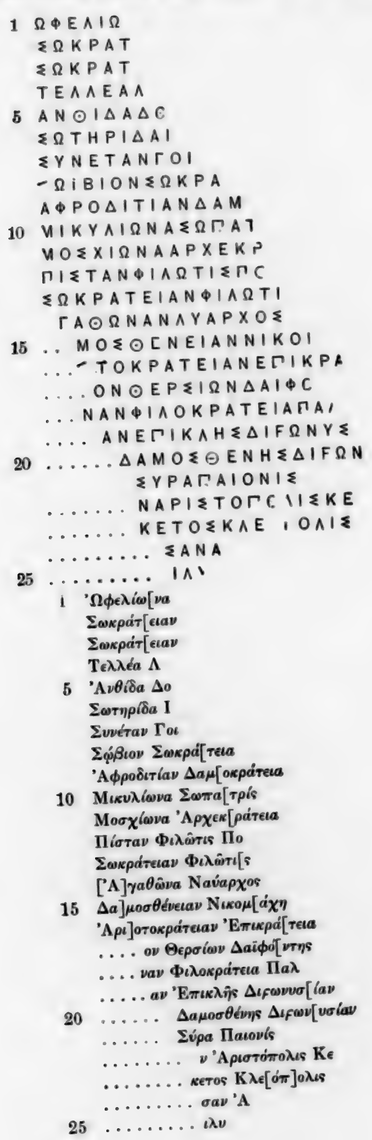
. . . α Φιλιστίδα
. . . ο(?)κόσμιος ο(or ω) . .
το]ῦ ἔτεος α . . .
τ]ῆς Φιλισ[τίδος
ἀδ]ελφὸς
. . . αι επ(?) . . .
. . . ε(?) . . .

In line 3 Fränkel, *C. I. G. P.* 532, would read ἐμή]νε τεὸς. The small holes make one think of a dedicatory offering by Philistis or her brother, but it is useless to speculate in detail about the inscription.

XI.

Found in the West Building, close to the wall at the southwest corner, April 2, 1894. The stone is irregularly broken with an inscribed surface about .31. m. × .12 m., and is about 12 m. thick. The letters are .005 m. to .007 m. high, very regular, and remarkably well preserved. They have no ornamentation except that the strokes are generally broadened a little at the end. The inscription may belong to the third century, but probably to the fourth, and is a fine example of careful cutting.[1]

[1] Yet the first *alpha* in Ναὐαρχος, line 14, has no cross-bar, which makes the words look like Ἀγαθάρων Δώρχος, an impossible combination. The first *epsilon* in Δαμοσθένειαν in the next line also lacks the middle stroke.



1 Ὠφελίω[να
Σωκράτ[ειαν
Σωκράτ[ειαν
Τελλέα Λ
5 Ἀνθίδα Δο
Σωτηρίδα Ι
Συνέταν Γοι
Σώβιον Σωκρά[τεια
Ἀφροδιτίαν Δαμ[οκράτεια
10 Μικυλίωνα Σωπα[τρίς
Μοσχίωνα Ἀρχεκ[ράτεια
Πίσταν Φιλῶτις Πο
Σωκράτειαν Φιλῶτι[ς
[Ἀ]γαθῶνα Ναύαρχος
15 Δα]μοσθένειαν Νικομ[άχη
Ἀρι]στοκράτειαν Ἐπικρά[τεια
.... ον Θερσίων Δαΐφ[αντης
.... ναν Φιλοκράτεια Παλ
..... αν Ἐπικλῆς Διγωνυσ[ίαν
20 ..... Δαμοσθένης Διγων[υσίαν
..... Σύρα Παιονίς
..... ν Ἀριστόπολις Κε
..... κετος Κλε[όπ]ολις
..... σαν Ἀ
25 ..... ιλυ

We have here simply a list of names, some in the nominative and some in the accusative. On the left, where the original edge of the stone is preserved, we seem to have an accusative at the beginning of each line. In the first instance in which we have two consecutive names, line 12, the second name is in the nominative. In line 14 it is the same, and so on apparently to the end. We cannot determine whether the third name is an accusative, thus making a regular alternation, until we reach line 21. This line, however, is peculiar in having a little blank space each side of the preserved letters. It is possible that before Σύρα an accusative stood, separated from it by an interval slightly greater than usual. Παιονίς (which has a space after it for more than two letters), is doubtless an epithet of Σύρα, and so does not break the alternation. Line 23 is the only one which seems to do this, since -κετος is probably the ending of a name in the nominative; and Κλεόπολις, which follows, seems to be a second name in the nominative. It is also difficult to get a name short enough to precede]κετος supposing this were the ending of an accusative, when only seven letters in all are lacking.

The inscription may be a record of emancipation of slaves, with the slaves' names in the accusative, and the owners' names in the nominative. In such documents, at Delphi and elsewhere, women's names generally outnumber men's names by more than two to one.[1] In this list the proportion of women's names is even larger.

While some of the names are unusual, none of them are strange enough to be remarkable. Ὠφελίων is interesting as occurring again in different shape in No. XIV. It is perhaps a favorite in Argolis, as it appears in *Dialekt-Inschriften*, 3269, 3341, 3401.

The use of the *digamma* in Διγωνυσ[ίαν], which occurs twice, and the Doric ending α for the first declension names, show some retention of old style, and caution us against assigning too late a date to the inscription.

XII.

Found towards the close of the excavations of 1894. Of irregular shape, about .40 m. long and .19 m. broad, .08 m. thick. Letters of the same size as those of Nos. XI., XIII. (.005 m. to .007 m.), and almost of the same form.[2] The surface is so badly worn away that but little can be made of the inscription, and that little only on the left side.

Only a few proper names result from the most careful scrutiny, hardly enough to make it profitable to add a transcription in small letters. Since the differences between the letters of this inscription and those of Nos. XI., XIII., were at first hardly discernible, and since this stone had no original edge preserved, it seemed as if it might belong to the same inscription. The thickness of the stone would not be an insuperable objection, as both fragments are extremely uneven at the back. Furthermore, while most of the names which can be made out with certainty are in the nominative, we have Χάριτα in line 13 and an accusative ending apparently at the beginning of line 20. Even the two consecutive nominatives in line 5, which may be regarded as certain, although this is one of the most worn places of the stone, are paralleled in No. XI., as we have seen. Some of the names are also the same, as Ἀριστόπολις (5), Ἀγάθων (14), perhaps Κλεόπολις (19, 21), and in different form Ὀφελλίων (20).

But even the slight differences in the letters mentioned above, taken together with the different thickness of the stones, make it safer to treat the two pieces as belonging to different inscriptions.

[1] Smith, *Dict. of Antiq.* II. 61[b].

[2] M is somewhat broader, with the upright bars more perpendicular. O is somewhat smaller.

```
1          ΝΑΞ ΜΙΑΙ⋏
           ΟΛΟΞ ΛΥ...ΟΞ
             Α ΑΡΧΕΜΑΧ
       Α ⊦Ι⋏ΕΙΑ Δ                ΦΙΛ
5          ΑΡΙΞΤΟΠΟΛΙΞ ΝΑΥΠΛΙΑ—
       Α ΛΑΚΩ ΛΥ Α                ΤΟΛ
           ΑΑΙΡΙ
             ΑΤΗ
              Ξ                          ΕΥΞ
10           ΡΑΤ
           ΑΦΑΗΞ Ε
            ΞΩΞΤΡΑ⁻
         ΛΑΡΙΤΑ . ΑΡΙ
       ΛΥΞΙΞ
       ΑΓΑΘΩ
15     ΚΛΗΓΟΡΑ Γ
       ΧΙΓΓΑΠ
         ΚΛΕΙΔΑΟΚΛ
         ΠΠΟΞ ΚΛΕΟ
20       ΟΝΟΦΕΙΛΛ
          ⋏ΗΞ ΚΛΕΟ..ΛΙΔΑ
          Α⁄ Γ⊦ΙΜ...ΑΜΥ

       Ν ΑΡΑΧΝΑΞ
```

```
1          νας Μιαι
           ωνος Λύ[αρχ]ος
           α 'Αρχεμάχ[α
           α Φιλεία Δ                Φιλ
5          'Αριστόπολις Ναυπλία
       α Λακώ Λυ..α....τολ
       α Λίρι
           ατη
           σ
10         ρατ                       ευη
           αφανης 'Ε
            Σωστράτ[α
           Χάριτα 'Αρι[στόπολις
           Δυσισ[τράτα

15         'Αγάθω[ν
           Κληγό[ρα] Π
         'Αρ]χίππα
           κλείδα 'Οκλ
       'Αρχί]ππος Κλεό[πολις
20         ον 'Οφελλ[ίων
           νης Κλεο[πο]λίδα
           αιπειμ . . . 'Αμυ[κλαῖος
         ν 'Αράχνας
```


We seem to have genitives also in this inscription, as *-ωνος* (2), *'Αράχνας* (23), *]κλείδα* (18). Of these, however, only the last seems reasonably certain, as the first may be *-ονος*, a nominative ending, and in line 23 we may have *'Αράχνα* followed by a name beginning with Σ.

Line 22, which shows at the beginning several letters which are hard to combine into any proper name, may contain something else than names, but this is doubtful. After this line there is space for another, which was left blank.

XIII.

A small irregular piece, .07 m. from top to bottom, .18 m. wide, of about the same thickness as No. XII. The letters also are identical in form, so that in spite of different weathering[1] it is not unlikely that it formed a part of the same inscription. It was found at the close of the work in 1894. A small piece of the surface at the right, about .04 m. square, is now detached. But the two fragments fit so perfectly that there is no doubt that they belong together.

```
                                  ΚΕι
       \ΚΙΟΝΑΡΙ . . . . .        ⁝ΜΑΧ
ΦΙΛΩΝΙΔΑΝΦΙ . . . . .           ⁄Ο
Γ⁝ΙΞΤΑΝΑΝΘΙΓ
   ΡΥΞΙΓΓΟΝΞ⁘
      Ν
```

κει

Φυλ]άκιον 'Αρι[στώ 'Αρχ]εμάχ[ου
Φιλωνίδαν Φι[λωτίς] Χο
Πίσταν 'Ανθίπ[που
*Χ]ρύσιππον Σω

'Αρχεμάχου in line 2 is suggested by the same name in XII. 3, although the space is rather scanty for so many letters. The two compounds in *ἵππος* are matched by the two in XII. 17, 19. *Πίσταν* occurs in XI. 12.

XIV.

The stone is very streaked limestone, .11 m. thick, irregularly broken. The greatest length of inscribed surface, from top to bottom, is .30 m.; greatest breadth, .23 m. It is not finished off evenly at the top, where the heading shows that we have the original edge. The letters are .01 m. high. A remarkable feature of the inscription is that in the top line where the stone is chipped off the letters are cut down into the breaks along the edge.

```
1          ΜΝ ΑΜΟΝΕΞΗΡΑΞΟΙΕΙ
       ΑΡΙΞΤΟΚΡΑΤΗΞΤΙΜΑΓΟΡΟΥ
       ΤΕΟΞΤΗΜΕΝΙΔΑΞΙΞΤΡ
       ΓΥΕΥΞΑΝΤΑΞΕΙΞΑΥΤΟΥΞ
5      ΑΡΚΕΙΔΑ ΕΡΜΟΓΕΝΗΞ[ΑϵΞ]ΜΑ
       ΛΑΡΑΒΟΥΑΝΔΡΙΚΟΞ[ΑϵΞ]ΦΑΗΝ
       ΞΙΑΣ [ΑϵΞ]ΦΑΗΝΑΣ ΔΑΜΟΙΤΑ
         ϵΑΙΣ ΧΡΩΝΟΣ ΠΩΛΑΘΕΕΣ
       ΑΡΧΙΔΟΞ ΑϵΑΝΤΙΠΑΤΡΑ
10     ΤΟΞ ΝΑΥΠΛΙΑ ΑΑΑΡΜΟΝ
```

[1] This piece is so reddened that it seems at some time to have been exposed to fire.

ΝΑΣΥΑΔΑΙΦΙΛΙΣΤΩ ΑϹ Κ
ΝΙΚΗ ΑϹ ΚΛΕΥΚΡΑΤΕΟΣ
ΦΙΛΟΝΙΚΑΣΣΜΙΡΕΙΔΑΙ
ΑϹ ΘΕΟΔΟΣΙΑΣ ΡΩΜΑΙΑ
ΑΓΑΘΩΝΟΣ ΕΝΑ ΡΓΕΙΝ
ΞΕΝΑΣ ΚΕΡΚΑΔΑΙΘΙΟ
ΙΟΚΛΑΑΡΙΣ ΤΩ ΑϹ
ΦΙΛΙΣΤΙΩΝ ΑϹ ΘΙΟΦΑΝ
.ΡΙΤΥΛΛΑ ΛΥΚΟΦΡ
.ΡΑΤΕΟΣ ΝΑΥΠΛΙΑ
....ΔΙΩΝΥΣ ΟΥΚ
....ΕΙΑΣ Δ ΟΔΟΡ

1 'Ιερο]μνάμονες Ἥρας οἱ ἐ[πὶ
'Αριστοκράτης Τιμαγόρου
τεος Τημενίδας 'Ιστρ [ἐγ-
γυήσαντας εἰς αὐτούς [ἀπελευθέρων τῶνδε
'Αρκειδα 'Ερμογένης ΑϹ Μα
Λαράβου 'Ανδρικός ΑϹ Φαήν[ας
σίας ΑϹ Φαήνας Δαμοτά[δας
ε Λἴσχρωνος Πωλαθέες
'Αρχίδος ΑϹ 'Αντιπάτρα
τος Ναυπλία ΑΑ 'Αρμον[ίας [Φαη-
νας 'Τάδαι Φιλιστώ ΑϹ Κ
νίκη ΑϹ Κλευκράτεος
Φιλονίκας Σμιρεῖδαι
ΑϹ Θεοδοσίας 'Ρωμαία[ς
'Αγάθωνος ἐν 'Αργει Ν
ξένας Κερκάδαι Θιο [Δα-
μοκλᾶ 'Αριστὼ ΑϹ Σ
Φιλιστίων ΑϹ Θιοφαν
Κ]ριτύλλας Λυκόφρ[ων [Κλευ-
κ]ράτεος Ναυπλία
. . . . Διωνυσίου Κ
. . . . είας Διόδωρ[ος

This inscription seems to be a list of certain persons who had become security to the Hieromnemons for something. In my first publication I ventured to make the sign ΑϹ, which does not occur elsewhere, a numeral sign, although I could not assign it a value. The fact that in line 9 the form ΑϹ, and in line 10 ΑΑ, appeared made this supposition seem plausible in view of the variety of numeral systems in the Argolid.[1] But this explanation is so uncertain that I feel obliged to leave the meaning of the sign or signs doubtful. It seems clear that certain persons designated by the nominative case become sponsors for others designated by the genitive case, probably freedmen.

Probably we have lost at least half of the inscribed surface. The first line must have contained after the ἐπί at least a proper name of some magistrate who gave his name to the year. This would make a line of about thirty letters. If in the next lines we have

[1] Collitz, *Dialekt-Inschriften*, Nos. 3286 (Argos), 3318 (Hermione). See also Dittenberger in *Hermes*, VII. (Nemea), 3325 (Epidaurus), 3362 (Troezen), 3384, 3385 pp. 62 ff.

the names of *four* Hieromnemons, as we might expect from No. II., and the names of their fathers, with some such formula as ἀνέγραψαν τοὺς ἐγγυήσαντας,[1] even forty letters to the line will not suffice. It is of course possible that there were only three Hieromnemons at the time of this inscription. But line 5, to go no farther, with a name like Ματροδώρου, and another name with the usual sign (for the order, up to line 9, seems to be nominative, sign, genitive), would make a line of forty letters. It is the lack of such a large part of the inscription that makes the interpretation full of difficulties. In line 9 the order appears to be reversed, the genitive coming before the sign and the nominative after it.

Πωλαθέες (8), Τάδαι (11), Σμιρεῖδαι (13), Κερκάδαι (16), seem to designate guilds or possibly *gentes*, and may signify, according to Professor Fränkel's suggestion, 'Horse-breeders,' 'Swineherds,' 'Polishers,' or 'Sharpeners' (literally, 'users of emery'), 'Weavers.' The designations recall the names given by Clisthenes to the tribes at Sicyon (Herod. V. 68).

That the inscription is from Roman times may be inferred from the occurrence of 'Ρωμαία[ς], although the forms of the letters alone would not have led us to ascribe it to so late a period.[2] Many of the letters are apicated.

XV.

Inscribed on a stone built into the wall of one of the structures that adjoin the North Stoa. The wall is not of the best construction, and the inscribed stone was undoubtedly brought from elsewhere and built in at a date later than that of the cutting of the inscription. The dimensions of the stone, which has apparently been cut down to fit into its present position, are 2 ft. 11.5 in. by 1 ft. 11.5 in., and the upper line of the letters is 3.5 in. below the top of the stone. The height of the letters is about 3 in. The upper left-hand corner of the stone is broken off. The inscription is very clearly cut. The apparent dot in the first O is almost certainly only a break in the surface of the stone. The form of *sigma* is noteworthy in an Argive inscription.

DIFONVSIO

Διγονυσίου

Fränkel, *C. I. G. P.* 512, reads Διγωνυσίου on account of this form occurring in Nos. XI. line 20, and XIV. line 21.

Possibly this may be a patronymic genitive in a dedicatory inscription.

XVI.

Inscribed on a much-broken block of stone measuring 2 ft. 3 in. by 2 ft. by 1 ft. 3 in. (height). Found on the upper terrace just south of the remains of the earlier Temple.

AIIAMI

'Αρτάμι

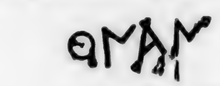
For the form see Foucart in Le Bas, *Explicat.* No. 109*a*. The inscription there published reads, Πρωτίων 'Αρτάμι. Foucart compares the forms Σαράπι, 'Ισι, 'Ανούβι (*cf.* *Mittheil.* IV. p. 148, No. 508; *Dialekt-Inschriften*, 3283).

[1] ἐγγυάω, though not given in the lexicons, is contained in Wescher et Foucart, *Inscr. de Delphes*, No. 139.

[2] The rounded epsilon which appears in the combination ΑϹ does not appear in the body of the inscription.

XVII.

Found in the same place as No. VI. The inscribed stone is of irregular shape, but the measurements may be roughly given as 11 in. by 5 in. The height of the letters is about 1.2 in. The dot in the O is not entirely certain.



. . . ο (or ω)ν ἀν[έθηκε(?)

The squeeze fails to show any trace of the line after ν which Fränkel notes, *C. I. G. P.* 509.

XVIII.

Inscribed on a very much broken fragment measuring roughly 9 in. by 5.4 in. The letters are about .9 in. in height. In line 2 the fourth letter is very likely, though not quite certainly, *theta;* and indeed the second letter of the line, so far as form goes, might be the same. In line 4 perhaps we should read τα instead of ντα.



Fränkel, *C. I. G. P.* 533, restores Κλ]εοσθε – | ν [– – – ἀνέστησ]εν.

XIX.

Μ Ο

On a fragment of a round base of limestone which must have had a diameter of about 1.50 m. with very elaborate moulding. The inscription is on a band .11 m. broad. Above this is a projecting lip now badly shattered, once .03 m. thick and projecting at least .02 m.; below is a concave moulding .01 m. broad, then a convex one, .02 m. broad; then a band .05 m. broad with a double maeander pattern. The shape of the fragment is like that of a sector of a cylinder, the inscribed surface, i. e. the arc, measuring .24 m. Height of letters, Μ .025 m., Ο .02 m.

We have the beginning of the inscription, since there is a space of .14 m. before the Μ, whereas the letters Μ and Ο are only .05 m. apart. It is useless to attempt a restoration. The inscription was probably brief, since other pieces of the base lying at the Heraeum have no letters.

XX.

Two marble fragments, rough at the back, .09 m. thick, both irregularly broken, (*a*) about .22 m. × .22 m.; (*b*) about .15 m. × .25 m. (height): letters in both .06 m. .07 m. in height, and with large apices.

(*a*) Λ Α ⊥ ·
Τ Ο Ρ Ο

(*b*) Λ Σ Ε

Whether (*a*) is properly first in order of succession one cannot say, as a reconstruction is not to be made out of such scanty fragments. All we can say is that (*a*) certainly yields in the second line Αὐτοκρά]τορο[ς and in the first line perhaps Ἀν[τωνίνου. (*b*) yields Σε[βαστόν. It is in itself highly probable that the worship at the Heraeum had a period of revival under Hadrian and the Antonines.

PART SECOND

STAMPED TILES FROM THE ARGIVE HERAEUM

BY RUFUS BYAM RICHARDSON

Clay that is to be fired presents an opportunity easily to inscribe a name so that it shall become more durable than one laboriously chiseled in stone. This opportunity is one too tempting to be neglected, and from the time when the Assyrians stamped their bricks, down to the present day, it has been improved. Tiles and bricks made by Romans, and impressed with the names of the legions by which and for which they were made, have been found all over Western Europe.[1] At first less attention was paid to Greek material of this character because the material itself has been less abundant. Birch (*Ancient Pottery*, p. 116 ff.) gives a list of the examples known at the time of the publication of that work; but that was nearly forty years ago, and even the second edition is more than twenty years old. In this interval many additions have been made to our stock.

A partial list of these additions was drawn up by Paris[2] in 1892, including contributions from Athens, Piraeus, Corinth, Mantinea, Tegea, Lycosura, Sparta, Olympia, Dodona, Tanagra, Thisbe, Metapontum, Velia, besides a considerable quantity from Elatea. This list might be greatly enlarged. The two great excavations of Olympia and Delos were, it is true, unfruitful in this sort of material; but Pergamon[3] has yielded one hundred and twenty-four different stamps, with sometimes forty impressions from the same stamp. The excavations at Megalopolis gave another smaller but interesting addition;[4] Chios,[5] Magnesia,[6] Tralles,[7] and Eretria[8] also furnish their contributions. Epidaurus has several tiles with the stamp

ΑΝΤΩΝΕΙΝΟΥ[9]

In the recent excavations at Corinth were found several tiles bearing the abbreviated title of the Roman city, COL. IVL. COR.[10]

Of especial interest is a tile-fragment from the temple of Apollo at Amyclae, now in the Central Museum at Athens, and not yet published. On this the stamp has been impressed twice. The first time it was done so carelessly that only the top line "took." We read ΑΠΟΔΔΩΝΟΣ. It is perfectly evident, however, from the breadth of the indentation in the clay, that another line ought to be there. But by good luck the workman saw his failure, and planted his stamp again about an inch higher up, this time squarely. The larger portion of the lower line has been spared. Just at the top of the fragment we read: —

ΛΑΩΙ
ΜΥΚΛΑΙΟΙ

[1] Marini, *Inscrizioni doliari*; Birch, *Ancient Pottery*, at the end.

[2] *Élatée*, pp. 110 ff. In the *Bibliothèque des Écoles françaises d'Athènes et de Rome, Fascicule* 60me.

[3] *Alterthümer von Pergamon*, VIII. 2, pp. 393 ff.

[4] *Excavations at Megalopolis*, p. 140, and *Jour. of Hell. Studies*, XIII. pp. 332, 336.

[5] *Athen. Mitth.* XIII. p. 182.

[6] *Ibid.* XIV. pp. 103 f.

[7] *B. C. H.* X. p. 327.

[8] *Eleventh Annual Report of the American School of Classical Studies at Athens*, p. 40.

[9] Kabbadias, *Fouilles d'Épidaure*, p. 107, No. 247.

[10] *Am. Jour. of Arch.* Second Series, I. (1897), p. 111.

Hardly less interesting is a brick from Sparta stamped: —

ΠΛΙΝΘΟΙΔΑΜΟCΙΑΙCΚΑΝΟ
ΘΗΚΑCΕΠΙΚΑΛΛΙΚΡΑΤΕΟC
ΕΡΓΩΝΑΝΙΚΑCΙΩΝΟC[1]

It is not necessary, however, to give here a complete catalogue of the material which has been found in recent years and has received casual mention in various periodicals. Enough has been said to show that certain stamped tiles found at the Argive Heraeum are far from being an isolated phenomenon in Greece. Of these tiles, seven fall at once into a class: —

(*a*) ⋸ΩΚΛΗ⋸ .
(*b*) ⋸ΩΚ/ .
(*c*) ⋸ΩΚ . . ⋸Α.
(*d*) ⋸ ΚΛΗ⋸ΑΡν.
(*e*) ΤΕΚΤ Ν,
(*f*) ΡΧΙΤΕΚΤ Ν
(*g*) \ ΡΧΙΤΕΚΤΩΝ.

The letters in all these are of the same form, about half an inch long, and raised.[2] There is no room for doubt that they are all from a single stamp, and one can easily restore for all the reading: —

⋸ΩΚΛΗ⋸ΑΡΧΙΤΕΚΤΩΝ

By a piece of good fortune, the Central Museum possesses a fragment found by Stamatakis at the Heraeum in 1878, containing ΛΗ⋸ΑΡΧΙΤΕΚΤΩΝ, evidently stamped with the same die. To remove any lingering doubt as to all these pieces belonging to one lot, it may be added that they are all of the same thickness (.035 m.); that about .025 m. from the top (which is the only original edge preserved) a thin stripe is impressed; that the stamp is in each case placed immediately below this stripe, always on the concave side of the tile, which on this side had a finish not given to the other side; and that the clay in all is rather coarse. After reaching this conclusion with very little difficulty, I had my attention called to a whole tile in the Polytechnikon, found by Dr. Schliemann in 1874 in the village of Chonika, about a mile and a half from the Heraeum. Here stands in full: —

⋸ΩΚΛΗ⋸ΑΡΧΙΤΕΚΤΩΝ

At the bottom of the tile is another stamp: —

ΔΑΜΟΙΟΙΗΡΑ⋸

This is, of course, for δαμόσιοι Ἥρας,[3] and would mark the tiles (κέραμοι being understood) as the public property of Hera.

On the stamped tile from Sparta, above mentioned, we had πλίνθοι δαμόσιαι σκανοθήκας, an exactly parallel case. So on the Piraeus fragments we have ΜΟ⋸ΙΑΠΕΙΡ

[1] *Athen. Mitth.* II. p. 441; mentioned also by Paris, *op. cit.*

[2] Particularly noteworthy are the small Ω, the ⋸ with oblique upper and lower bars, the Κ with short oblique bars, and the very long Ε, which makes ΕΚΤΩ descend like the side of a flight of steps.

[3] In some Argive, as well as in Laconian, inscriptions σ between vowels is changed to *h*, as in [Δαμο]ΐα, Roberts, *Introd. to Greek Epigraphy*, No. 79, and Ἐφημ., No. 81, while in other cases, in the same position it vanishes altogether. Thus in *C. I. G.* I. 1120, Τελέσιππος is used three times for Τελέσιππος, and Θράσυλλος for Θράσυλλος (in Collitz und Bechtel, *Argivische Inschriften*, p. 127, the rough breathing is given to these names). See Ahrens, *De Graecae Linguae Dialectis*, II. p. 78 f.

with πλίνθος probably supplied. The three Tanagra tiles bear ϟ O I ϟ O M A Δ.[1] The Tegea tile bears Δ A M O ϟ I O ϟ.[2] A fragment of brick, also from Tegea, has -ατης δαμόσιον.[3]

Another tile an inch thick and of great concavity, found at the Heraeum, has Δ A M O I O I.[4]

This word δαμόιοι does not put us in possession of any very definite information, such as that secured by the English excavators at Megalopolis, who identified the Philippeum by stamped tiles.[5] The whole precinct was sacred to Hera, and the tiles of any building, or even of a drain-pipe, might have been said to belong to her.

One's first thought is of roof-tiles. But the tile that we have entire in the Polytechnikon is very heavy and coarse. It is 1.10 m. long, .51 m. broad at the top, .44 m. broad at the bottom, .035 m. thick. The edges are cut off with a slant, making a cross section of this form: — 

It has been suggested to me that it might be a drain-tile, but so slight is the concavity that it would take at least five such pieces to make a cylinder, and this would be enormously large — a metre and a half or more in diameter. Of course, this might be the case; the tiles, however, would not make joints, but would simply touch one another with sharp edges thus: — 

It is not likely that the edges would have been made to fit so poorly if this had been the end for which the tiles were designed. Neither is it likely that tiles like this were intended to go in pairs, making a flat drain (one being imposed upon the other), for in that case the edges would have met thus: — 

For only one sort of a drain does a tile of this shape seem fit, viz., for an open drain. The lower smaller end of each upper tile would fit into the broader upper end of each lower tile, and make a good drain for a small quantity of water, e. g., the drippings from a roof. But it would be strange if such drains existed in quantity enough to have afforded us almost our only survivals of Heraeum tiles. Furthermore, a system that was fit for an exposed drain was fit to serve as a series of gutter-tiles on a roof (σωλῆνες). The zigzag edge was perhaps rude, but it could be covered by the καλυπτῆρες, as may be seen by the annexed cut: —



There is a breadth of only slightly over .14 m. to be covered by the καλυπτήρ. It would be just .14 m. if the turned up edges of the σωλῆνες, for so we may now call them, were cut off straight and not with a slant. If the καλυπτῆρες were as thick as the σωλῆνες, they must have had a superficial breadth of .21 m.[6] Perhaps we may assume .25 m. as a maximum. The σωλῆνες could have at most a breadth of only .30 m exposed.[7]

This adjustment gave a roof divided in its surface about equally between gutter-tiles

[1] Paris, *op. cit.* p. 112.

[2] *Athen. Mitth.* IV. 144.

[3] Paris, *op. cit.* p. 110.

[4] At Eretria, in 1894, a small fragment of a tile was found bearing apparently

ΔHMO EPETPI.

If ΔHMO be the true reading of the somewhat worn letters, H and M are strangely crowded together. The letters really look more like ΔIMO, an interesting iotacism.

[5] *Excavations at Megalopolis*, p. 141.

[6] The computation would be as follows: the taper of the σωλήν (.07 m.) plus twice the thickness of its edge (.14 m.).

[7] The computation would be as follows: .44 m. — (.035 m. × 2 + .035 m. × 2) = .30 m.

and covering tiles. The taper of the gutter-tiles affords an easy way of fitting each one into the next lower. Probably the covering tiles were arranged in the same easy way, the narrow upper end being overlapped by the broad end of the next covering tile. This did not make so fine a roof as is found on buildings having marble tiles, with their delicate καλυπτῆρες, or as the roof of the Treasury of Gela at Olympia with its more carefully matched clay tiles. But that it is a probable and natural arrangement is shown by the fact that tiles are now adjusted in the same way. The only difference is that they are now made much smaller. The tile in the Polytechnikon must be twenty or thirty times as heavy as those now in common use on the roofs in Athens. Such tiles were large enough to be held in position by their own weight, without mortar, even in spite of considerable wind, thus making a roof comparable to those made of flat stones, so common in the valleys of Northern Italy, where fierce winds sweep down over the mountain passes.

These tiles might be considered quite old and primitive were it not for the stamp which forbids such a thought. This even forbids our ascribing them to the time of the erection of the new temple of Hera, which was probably begun soon after the destruction of the older temple in 423 B. C., and completed before 400 B. C., to say nothing of the fact that Pausanias mentions Eupolemus as the architect of that temple. The West Building, also, if the signs of its age have been correctly estimated by the visiting architects, could not have borne these tiles on its *first* roof. Its massive character, however, and the short span of its roof would make it a very proper building to carry such heavy tiles.

As these were found in various spots, (*a*) at the north side of the West Building, (*c*) and (*e*) on and near the steps of the East chamber, the place of finding furnishes no clue as to the building to which we are to assign them.

Not to be too exact about the forms of letters on a stamp, and that, too, outside of Attica, where we are always uncertain as to dates of certain forms, we may yet say with considerable safety that the stamp cannot be earlier than the fourth century, B. C. The small *omega* would seem to make it venturesome even to put it into that century at all. But against any very late date may be arrayed the following considerations: —

1. A has a straight crossbar.
2. ϟ has its upper and lower branches very divergent.
3. There is no attempt at ornamentation.

But it is of course possible that the stamp-maker may have indulged in an affected archaism. The irregularity of the ending EKTΩN may be due to that. On the Amyclaean stamp there is no sign of a later date than 300 B. C., other than a very late form of the *omega* (W). As for ϟ with divergent upper and lower bars, it is found on bricks made perchance a year ago at Chalkis.

The name Socles, a 'Koseform' for Sosicles, is common enough, and affords no particular interest. But the meaning of ἀρχιτέκτων is an interesting question. The word seems, judging from its use in numerous inscriptions, to have the definite meaning of 'supervising architect,' holding office sometimes for the erection of a certain building, as in the case of the temple of Asclepius at Epidaurus, or for a term during which he would supervise all building and repairs, as at Delos. His office is well described by Fabricius (*Hermes*, XVII. p. 17), and by Homolle (*B. C. H.* XIV. pp. 477 ff.), who remarks: "Dans un grand sanctuaire comme celui de Délos, où les réparations, à défaut même de travaux neufs, exigeaient continuellement la surveillance et la capacité d'un homme de métier, on ne pouvait se passer d'un architecte. L'habitude d'attacher d'une façon permanente un architecte aux temples était assez répandue dans le monde grec."

In *C. I. A.* I. 322, Philocles is mentioned as an ἀρχιτέκτων, who with a γραμματεύς belonged to a board of ἐπιστάται τοῦ νεὼ τοῦ ἐν πόλει, ἐν ᾧ τὸ ἀρχαῖον ἄγαλμα, supposed to be the Erechtheum. In *C. I. A.* I. 324, a year later probably, for work on the same building an ἀρχιτέκτων named Archilochus received 37 drachmas for one prytany and 36 for another. This is pretty clearly a drachma a day. According to the same account, men who worked on columns got as high wages as 20 or even 22 drachmas a prytany. In *C. I. A.* I. 60, ἀρχιτέκτων and ἀρχιτέκτονες are frequently mentioned in connection with what is supposed to be the same work as that above mentioned. In an inscription from Delos, published by Homolle,[1] a certain Philistides receives a payment of one drachma a day. Homolle supposes him to have been the *architekton* who supervised all the buildings at the time on the island of Delos. At any rate, it appears that nothing was done in great building enterprises without the consent and advice of the *architekton*. κελεύει ἀρχιτέκτων is a phrase of very common occurrence in building-inscriptions; it occurs 34 times in the accounts of the *hieropoioi* of the temple of Apollo at Delos, edited by Homolle in *B. C. H.* VI. pp. 6 ff. The *hieropoioi* make payments at the order of the ἀρχιτέκτονος καὶ τῶν ἐπιμελητῶν, *ibid.* pp. 7, 8. In the Eleusinian inscription published by Foucart, *B. C. H.* IV. 226 ff., we read ὅπου ἂν δοκῇ τοῖς ἱεροποιοῖς καὶ τῷ ἀρχιτέκτονι. In the great building-inscription of Lebadea (*Insc. Graec. Sept.* 3073, line 160), we see that a completed piece of work is submitted to the ἀρχιτέκτων, while minutiae like the separate joints are attended to by a ὑπαρχιτέκτων.[2]

In an inscription from Epidaurus[3] mention is repeatedly made of an *architekton* Theodotus, who served for a period of more than six years at a salary of a drachma a day.[4] But the salary of an ἀρχιτέκτων was not uniformly a drachma a day.[5] In the year 279 B. C., at Delos, he received two drachmas a day; but at the same time certain workmen, Nicon and his son, got the same amount for working on a column.[6] At Eleusis, in the time of Lycurgus, an ἀρχιτέκτων received 72 drachmas for one prytany, or two drachmas a day,[7] while an *epistates* of seven men received only ten drachmas for the same time.[8]

The ἀρχιτέκτων ἐπὶ τὰ ἱερά at Athens,[9] and the ἀρχιτέκτων who had so much to do with the theatre of Dionysus, were undoubtedly supervising architects, whatever other functions went along with that office. The four persons mentioned in *C. I. A.* II. 194, col. c, as ἀρχιτέκτονες, are similarly engaged, although their work is at the Piraeus in connection with the ships.

Two things appear reasonably clearly from this list of inscriptions: —

1. When a man is called an ἀρχιτέκτων, as Socles here is, he cannot be considered to be the head of a tile factory.[10] In that case he would probably have been called κεραμεύς. Socles was doubtless the supervising architect for some particular building or for some one or more years.

2. The other result may seem surprising; viz., that a man who undertook important

[1] *B. C. H.* VIII. p. 305 ff.

[2] *Cf.* line 53: ἀριστῶσι τοῖς νεοποιοῖς καὶ τῷ ἀρχιτέκτονι (it was easy for Dittenberger to restore in No. 3075 [καθὼς ἂν κελεύῃ ὁ ἀ]ρχιτέκτων). *Cf.*, also, *C. I. G.* 2266, line 19: ἐπειδὰν δὲ συντελεσθῇ τὸ ἔργον. ἐπαγγειλάτω ὁ ἐργώνης τοῖς ἐπιστάταις καὶ τῷ ἀρχιτέκτονι.

[3] Kabbadias, *Fouilles d'Épidaure*, p. 78, Inscr. No. 145.

[4] His payment for one year is 350 drachmas; for another it is 353 drachmas.

[5] See the list given by Homolle in *B. C. H.* XIV. p. 478.

[6] *Cf.* line 71 of the great inscription published by Homolle in *B. C. H.* XIV. p. 389 ff.

[7] *C. I. A.* II. 834[b].

[8] *Ibid.* col. II. line 9.

[9] *Ibid.* II. 403, line 28.

[10] For the head of a tile-factory to style himself ἀρχιτέκτων would probably have seemed an unjustifiable assumption of dignity. Foucart (in *B. C. H.* VIII. p. 407) understands a brick from Thebes to bear the stamp of the maker's name, adding: *Les marques de ce genre sont encore assez rares en Grèce.*

responsibilities, requiring special knowledge and training, received the small payment of one or two drachmas a day.[1] This may be a good illustration that officials in Greece did not look for great profit. Quite likely, the only reason why the architect at Athens was paid at all, while the board of ἐπιστάται with whom he was associated gave their services free, was that he had to give up *all* his time to the work. Perhaps the payment given to a member of the Boulé during his time of actual service was regarded as a proper standard in paying for this sort of work. Probably the only difference between such an ἀρχιτέκτων as Socles and Ictinus or Libon[2] was that the latter were engaged in more important undertakings.

A word may here be added as to the practical reason for stamping tiles. Socles, who may of course have had his own tile-making establishment, did not wish to have a pile of his tiles stolen or mixed up with similar tiles.[3] Perhaps it is not without a bearing on such possible purloining that we read an account of the *hieropoioi* at Delos,[4] running thus: 'Bought 200 pairs of tiles; 70 pairs on one building, 44 on another; and turned over to the following *hieropoioi* a remainder of 76.' No mention is made of the deficit of 10.

The tiles were probably formed in a wooden mould, like that referred to in an inventory of Delos[5] as a τύπος ξύλινος κεραμίδων. That in some cases the stamp was affixed by a separate impression might seem probable from the fact that the upper stamp with Socles's name was not exactly uniform with reference to the stripe above it. But this may also be accounted for by supposing the metallic stamp, which made the letters so clearly cut, to have been a little loosened from the wood of the mould in some cases. I once saw some moulds at a brick manufactory in Eleusis in just that condition.

II.

A small, thin flat piece, .08 m. × .05 m., without resemblance to the Socles tiles, yet bearing the letters

O I O I H.

These seem to indicate the same stamp that was applied at the bottom of the Socles tile which is found entire in the Polytechnikon at Athens, i. e., ΔAMOIOIHRAΞ. The dimensions of the letters coincide exactly, their height being .015 m., except in the case of the *omicrons*, which are only half as high.

On a piece of tile painted black, with considerable curvature, are the letters MOIOI. As the stamp is entire at the right end, it did not in this case have HRAΞ. Otherwise the letters are the same.

III.

ETTINIK O
A

On a small piece .12 × .07 m., from the West Building.

After A what looks like P follows, but this is uncertain. The rest of the lower line is worn away. Coming to this from the pieces just discussed, one would be predisposed to

[1] That an architect was a man of some standing might appear from the words of [Plato] *Anterastae*, p. 135 B: ἐν τῇ τεκτονικῇ τέκτονα μὲν ἂν τρίαιτο πέντε ἢ ἓξ μνῶν ἄξιον, ἀρχιτέκτονα δὲ οὐδ' ἂν μυρίων δραχμῶν.

[2] It is a little strange that Pausanias (V. 10, 3) speaks of Libon as a τέκτων.

[3] The stamp with Socles's name, being on the upper end, would disappear when the tile was laid, even if it were a gutter-tile.

[4] *B. C. H.* VI. p. 136.

[5] *Ibid.* VI. pp. 29 ff.

read Ἐπίνικος ἀρχιτέκτων, but it is quite as likely that ἐπί is a preposition followed by a genitive, as in so many of the Corfú stamps containing the names of prytanes (Riemann, *Les Isles Ioniennes*, pp. 47, 54), or in the numerous stamps on amphora-handles collected by Dumont in *Insc. Céramiques de la Grèce*. The word following the name may be ἄρχοντος, for aught we know.

IV.

Another fragment still smaller, .09 m. × .07 m., has a name clearly in the genitive. To the left we read: —

ΥΟΛΙ
Λ

It is evident that the top line runs from right to left, and we probably have a name ending in ιλου. If the next line turns back in a *boustrophedon* order, we may here have ἐπὶ – -ίλου ἄρχοντος or ἀρχιτέκτονος. Such a turning back of the second line is seen on one of the Megalopolis tiles.[1] In our inscription, as in that one, ΔΥΟ is also possible, since the mark at the edge of the fragment, after the supposed Α, looks oblique, and may be a part of a Υ. The reading of the name from right to left has many parallels in stamps. A Megalopolis tile[2] has the name Φιλιππoίμην read this way. The three tiles from Tanagra read in the same way,[3] as well as one of the three tiles from Chios before mentioned. The maker of the stamp in these cases preferred to cut his letters running in the usual order, regardless of the hundreds of impressions which would thus read reversed.

We are sure that in some cases the stamps were not cut as a whole, but were made up of movable letters.[4] On an amphora-handle from the Piraeus,[5] the reading is from right to left; but the letters Ϟ, Ρ and Κ are left turned the other way. In turning his letters the workman forgot to arrange them so as to make the direction of the word and of the letter consistent.

V.

A series of four tile-fragments found on the south slope below the Heraeum just at the close of the work (spring, 1894). These contain: —

ЄΠΙΠΤΟΛΥΓΝΟ
ЄΠΙΠΤΟ
ЄΤ

They are all impressed on the concave side of fragments about an inch thick. The letters are not raised, as in the other fragments here catalogued, but depressed. The fact that in No. 1 Є is so close to the Π as not to allow room for the cross-bar of the latter to extend so far to the left as in Nos. 2 and 3 points to a slight difference in the moulds, possibly due to the use of movable letters. The date of this stamp is evidently very late. Whether Polygnotus was an architect or a sacred official for the year is not known.

[1] *J. H. S.* XIII. p. 336, No. 1.
[2] *Ibid.*
[3] *B. C. H.* XI. p. 209.
[4] Blümner, *Technologie und Terminologie*, II. p. 32; and Dumont, *Inscr. Céram.*, pp. 395, 396, 398, where are cuts illustrating the making up of these stamps, in some of which letters are misplaced.
[5] *B. C. H.* XI. p. 207.

VI.

ΝΟϷΞΔ δείρου

Two fragments, one .18 m. × 0.18 m., the other .16 m. × .19 m., one with a raised border .05 m. above the stamp, and the other without it, but the stamp is evidently the same on both pieces. The letters are .01 to .012 m. high. We seem to have here a case of a stamp reversed in which the character ϷΞ ρ was not reversed like the other letters. It is singular that the break should occur in both pieces at exactly the same place, and so leave us in doubt whether we have the genitive of Δείρος or of some longer name.

VII.

ΕΠΙΚΟΡ
ΜΑΚΙΑ

A fragment found at the close of the season of 1895. The field of the stamp is .10 m. × .05 m. The letters are .02 m. high. Another fragment bears $\frac{\text{ΕΠ}}{\text{ΜΑ}}$ which seems to be a duplicate of this. ΚΟΡ is probably an abridgment of Κορνηλίου.

VIII.

ΚΛΟΙϹϹΘΕΝΗϹ Κλοισσθένης

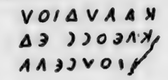
A fragment of absolutely flat tile, .02 m. thick, .26 × .25 m.; letters .02 m. high. Another diminutive piece yields ΚΛΟΙϹϹ. The square *sigmas* cannot belong to a date much before the beginning of the Christian era, and the contamination of ει and οι would seem to indicate a date much later still. Such a phenomenon in Attica would hardly appear before the third century of our era.[1]

IX.

A small piece of the upper right-hand corner of a tile with Ϟ next to the preserved edge. This Ϟ is exactly like those in the Socles stamps, and the piece agrees in thickness; but this cannot belong to that series unless the Δαμοίοι Ἥρας was transferred to the top.

X.

Broken a little at the right-hand lower corner. The raised letters are badly worn in the middle of the second line, and at first glance the inscription seems to be easily legible. It runs from right to left, thus: —



Hopeful as the first line and the first half of the second look, affording Κλαυδίου Κλεοσθ – – –, we must leave the rest unsolved.

XI.

But the pearl of the tile-inscriptions from the Heraeum is on the fragment of the upper face of the edge of a huge bowl, which must have had a diameter of about three feet. The fragment was found in 1894 "at the West end of the South Slope, behind the

[1] Meisterhans, *Gram. Att. Inschr.*, p. 46, § 16. 10.

retaining wall of the West Building, mixed up with a quantity of early pottery and figurines."

The letters are not stamped so as to appear raised as in those hitherto mentioned, but are incised, cut into the clay when it was moist. The inscribed face of the fragment is .22 m.×.06 m. The letters are .03 m. high.

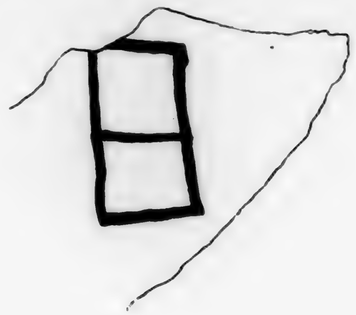
/MΒΕΡΑΜΕΙΝΙ τ]ᾶς Ἥρας εἰμί ·

This inscription, judging by Α and Ε, and above all by Μ = σ, must be considerably older than No. XII. of the inscriptions on stone. It must date at least as far back as 500 B. C.

While it may belong to a large amphora, it may also belong to a lustral bowl. This might be the very bowl in which the mad king Cleomenes of Sparta dipped his bloody hands before performing his bootless sacrifice which is graphically described by Herodotus (VI. 81 ff.).

ADDENDUM.

Fragment of a roof tile with a closed *eta* stamped upon it. Here reproduced in facsimile in its actual size. As this fragment was found under the flooring of the Second Temple, it must have come from the Old Temple, or from one of the buildings contemporary with it.



INDEX

INDEX

Abas, divides Argive territory, 34.
Acraea, part of territory of Heraeum, defined, 13.
Acrisius, Argive tradition of, 34 f.
Admete, daughter of Eurystheus, founder of Samian Heraeum, 5.
Æolian deposits, 95.
ἀζρήτευε, meaning of, 200 f.
Agamemnon, place of, in Argive tradition, 35; chosen leader against Troy at the Heraeum, 35.
Altars, below foundations of Second Temple, 20, *n.* 2.
Amazon, head of, related to Polycleitan type of Amazon, 164; described, 180 f.
Amazonomachia, fragments of, from metopes of Second Temple, 150 f., 182.
Andesites, at the Heraeum, 100.
Anthemion, upon cyma from Second Temple, 123 f.
Apollo Pythaeus, temporarily supersedes Hera as principal divinity of Argive plain, 4, 37.
Aqueducts, connected with the Revma-tou-Kastrou, 16 ff.
Archaic ξόανον, from western pediment of Second Temple, 149 f.
Archinus, founder of games in honor of Hera, 10.
Architecture of the Heraeum, 103 ff.
Argive-Linear vases, proposed designation for so-called "Proto-Corinthian" vases, 50; preponderance of, at Heraeum, 50; represent a continuous indigenous element, 59.
Argolis, defined, 3 *n.*; scenery of, 86 f.; geologically of recent formation, 91; rivers of, 92; geological history of, 93 f.
Argos, meaning and application of the name, 3 *n.*; connection with the Heraeum, 10 ff., 27; supremacy in the Argive plain comparatively late, 31; probably raised to importance by Dorians, 36; struggle with Sparta, 37; rehabilitated by Phidon, 37.
Argus, in Argive tradition, 33.
ἀρχιτέκτων, meaning of, 219 ff.
ἀστὶς ἀν Ἄργει, 10, 34.
Asterion, river near Heraeum, identified by Steffen, 14 f., 94, 107.
Athena, head of, from metopes of Second Temple, 183 f.
Athena Lemnia, head of, compared with heads of Polycleitan type, 179 f., 190.
Athens, artistic relation with Argos, 163 ff.

Bacchus, head of, in British Museum, identified with Polycleitan Hera, 190 f.
Bases for statues, before temple, 20, 144; between Upper Stoa and Northeast Stoa, 112.
Bates, W. N., theory of, concerning sculptures of Second Temple, 149 f.
Beehive tombs, 79 f.
Beta, form of, in Argive inscriptions, 203.
Black layers, principal finding places of small objects, 40, 73, 79, 82.
Boy, with dove (?), statue of, 143; head of, from Brauron, belonging to Professor Furtwängler, 165 ff.
Brauron, head from, compared with head of Hera from Heraeum, 165 ff.
Bronzes, 61 ff.; dating of, 62; classification of, 62; primitive, 62; Mycenaean, 62 f.; geometric, 63; archaic, 63; oriental influence in, 63.
Burial of ancient remains, causes of, 94 ff.
Bursian, excavations of, at the Heraeum, 67 ff.

Canephorae of Polycleitus, 167 f.
Capitals, details of, 113.
Caryatids of Erechtheum, influenced by Argive art, 161; compared with head of Hera from the Heraeum, 166 ff., 190.
χάλκεος ἀγών, 10.
Chryseis, causes destruction of Old Temple, 110, *n.* 1.
Cisterns, connected with the Revma-tou-Kastrou, 16 ff., 136.
Clark, W. G., describes excavations of Rangabé, 69 f.
Coins, paucity of find in, 61.
Columns, of Upper Stoa, 112; of Northeast Building, 115 f.; of East Building, 116; of Second Temple, 120 ff.; interior, of Second Temple, 126; of South Stoa, 128 f.; of West Building, 132.
Cow, closely associated with worship of Hera, 6; offered at feast of Hecatombaea, 8.
Cresilas, position and influence of, 164 f.
Cretaceous Period, formations of, 92 f.
Cuckoo, associated with Hera, 21; represented upon cyma from Second Temple, 123 f.
Curtius, theory of, concerning sculptures of Second Temple, 149 f.
Cyclopean wall, leads to identification of site of Heraeum, 25; early remains below, 27; excavations at, 74; described, 109 f.
Cyma-moulding, from Second Temple, 123 f.; compared with moulding of Parthenon and other temples, 160, and *n.* 2.
Cynadra, well near Heraeum, 16, 18.

Danaus, Argive tradition of, 34.
Diadumenus of Polycleitus, compared with Doryphorus, 169 ff.; head of, in British Museum, 171, and *n.* 2; marks an advance over Doryphorus, 173; compared with head of youth from metopes, 178 ff.; compared with head of Hera, 190.
Διξοννσίου, in inscription, 75, 77, 213.
Διξοννσον, in inscription, 208 f.
Digamma, in inscriptions, 75, 199 f., 208 f.; 213.
"Dipylon" terra-cottas, 46 f.; comparative rarity of works of "Dipylon" style at Heraeum, 47; vases, 53.
Doric tribes, earliest mention of names of, 200.
Doryphorus of Polycleitus, reproduction of, on a lamp, 75; style of, in head of ephebus from a metope, 77, 163, *n.* 4; compared with heads of youths from metopes, 168 ff., 178 ff.; compared with Diadumenus, 169 ff.; compared with head of Hera, 190.
Doves, group of, on stone, 112.
Drapery, treatment of, in Heraeum marbles, 157.
Drill, freely used in marble statuary from the Heraeum, 154 ff., 178, 180.

Ear, treatment of, in early art, 190, *n.* 1.
Earthworms, a factor in the burial of ancient remains, 96 f.
East Building, discovered 1894, 77 f.; described, 116 f.
Egyptian objects, 64, 84.
Eleutherion, river near Heraeum, now Revma-tou-Kastrou, 14 ff., 94, 107; water of, used in lustrations and at the emancipation of slaves, 18 f.
Elias Berbatiotikos, mountain near Heraeum, ancient Acraea, 13.
Engraved stones, 64.
Enneacrunus, compared with Eleutherion, 17, 19.
Eocene Period, formations of, 92.
Ephesus, cyma from temple of Artemis at, compared with cyma from Heraeum, 160, and *n.* 2.
Epidaurus, sculptures from, compared with Heraeum marbles, 160 f.
Erechtheum, cyma of, compared with cyma from Heraeum, 160 f.
Euboea, part of territory of Heraeum, defined, 12 f.
Eupolemus, of Argos, architect of Second Temple, 20, 118.
Eurydice, daughter of Lacedaemon, founder of oldest sanctuary of Hera at Sparta, 4.
Eye, representation of, in ancient statues, 142.

Felsite, at the Heraeum, 100.
Finlay, gives account of General Gordon's excavations at the Heraeum, 65 ff.
Fish, represented on ancient stone, 112 f.
Furtwängler, declares Heraeum marbles Attic, 164; refuted, 164 ff.

Gabbros, found at the Heraeum, 99 f.
Geology of the Heraeum region, 89 ff.
"Geometric" terra-cotta figures, 46 f.; vases, 53; bronzes, 63; comparative paucity of works of "Geometric" style at the Heraeum, 47, 62, 63.
"Geometric," a misnomer, as applied to Dipylon vases, 53. See "Dipylon."
Gigantomachia, represented in sculptures of Second Temple, 20, 148 ff.
Glykia, stream near Heraeum, formerly identified with ancient Asterion, 14.
Gordon, General, first excavations of, at the Heraeum, 64 ff.
Graces, representation of, upon crown of Polycleitan Hera, 21 f.
Guilds, mention of, in inscription, 213.

Hair, treatment of, on head of Hera, 166 ff.; on Doryphorus and Diadumenus, 170 ff.; on female head from metopes, 182; on head of young girl from metopes, 183; on head of Athena from metopes, 184.
Halicarnassus, cyma from Mausoleum at, compared with cyma from Heraeum, 160.
"Hammer-stones," 99 f.
Head, of Hera, discovered 1892, 73, described, 189 ff.; of Athena, from metopes, 183 f.; of Amazon, from metopes, discovered 1892, 73, described, 180 f.; of ephebus, from metopes, discovered 1894, 77, described, 178 ff.; of warrior, from metopes, 181; female, from metopes, discovered by Rangabé, 69, described, 181 f.; female, from metopes, 182 f.; of young girl, from metopes, 183.
Heads from Heraeum, treatment of, 157 f.; types of, 158; compared with head of Doryphorus, 168 ff.; fragments of, from metopes, 184 f.
Hebe, chryselephantine statue of, 22; reproduced on coins, 23 f.; marriage of, represented on altar, 24.
Hecatombaea, festival of Hera, 8.
Hera, earliest divinity of Argive plain, 4; nature and evolution of, 5 ff.; chryselephantine statue of, 21 ff.; head of, discovered at Heraeum, 23, 73, 189 ff.; bust of, in British Museum, 23; ancient wooden image of, 24; early stone image of, 42 f., 139; probably central figure in western pediment of Second Temple, 150.
Hera Acria, 6; Aegophagus, 4, *n.* 9; Antheia, 8; Aphrodite, 4, *n.* 9; Argeia, 4; Eileithyia, 8; Pelasgis, 5 f.
Heracles, marriage of, represented on altar, 24.
Heraeum, chief religious centre of Argive plain, 3 f.; source of Hera cult in other localities, 5; topography of, 10 ff., 105 ff.; three periods in history of, 11 ff.; early history of, 25 ff.; earliest temple founded, *circ.* 1830 B. C., 28; later history of, 38; age of, as determined by finds, 38 ff.; nature of the site, 39 ff., 94; history of previous excavations, 64 ff.; history of excavation by American School, 70 ff.; burial of the site, 97 ff.; principal buildings, 108.
Hieromnemons, mentioned in inscriptions, 199 f., 205, 206 f., 211 ff.
Hieros gamos, 8, 19.
Hissarlik, walls of First and Second Cities compared with early walls at the Heraeum, 27; vases from, correspond to early vases from the Heraeum, 56.
Honeysuckle scroll, upon *stephane* of Hera on coins, 22; upon cyma of Second Temple, 23.
Horses, sacred to Hera, 8.
Hynethians, Doric tribe, mentioned in inscription, 200.
Hypocaust, in Roman Building, 135.
Hyrnetho, myth of, 200.

Iliupersis, represented in temple sculptures, 20, 148 ff.
Inscriptions from the Heraeum, 195 ff.
Io, in Argive tradition, 33 f.; identified with first priestess of Hera, 34.
Iron, finds of, 61, 77.

Jones, Stuart, theory of, concerning sculptures of Second Temple, 152.
Jurassic Period, formations of, 92 f.

Linear ornamentation, a prominent element in the decoration of Mycenaean vases, 53 ff.; presents an unbroken development from earliest primitive forms of vases to the period of perfect freedom, 55 ff.
Lion's head water-spouts, from Second Temple, 123 f.; from South Stoa, 130.
Lower Stoa, described, 136.
Lynceus, founder of games in honor of Hera, 10.

Marble statuary from the Heraeum, 137 ff.
Megapenthes, earliest figure in traditions of Argos, 31; exchanges kingdoms with Perseus, 35.
Metopes of Second Temple, fragments of, discovered by Rangabé, 69; discovered 1892–95, 73, 77, 80, 83; described, 146 ff., 177 ff.
Mosaic floor, from Roman Building, 134 f.
Muro, William, first published account of the discovery of the Heraeum, 64 f.
Mycenae, connection with the Heraeum, 10 ff., 26 ff.; with Tiryns and Argos, 36.
Mycenaean terra-cottas, 44 ff.; produced under influence of ceramic art, 45 f.; vases, classification of, 50 ff.; geometric elements in, 52 ff.; bronzes, 62 f.; graves, 28, 69, 79, 92; walls, 84.

Naucydes, author of chryselephantine statue of Hebe, 22, 24.
Neogene Period, formations of, 92.
Niké Balustrade, style of, compared with Heraeum marbles, 157, 160, 188, 192.
Northeast Building, described, 114.
Northwest Building, discovered 1894, 78; described, 134.

Obsidian, at the Heraeum, 100 f.
Old Temple, referred to by Pausanias, 24 f.; partially excavated, 1892, 73; completely excavated, 1893, 74; remains of, described, 110 f.
Olympia, finds at, compared with finds at the Heraeum, 39; bronzes and terra-cotta figurines from, compared with terra-cotta types from Heraeum, 48 f.; site of, compared with site of Heraeum, 108; temple of Zeus at, proportions of, 121, *n.* 1; treatment of hair in heads from, 158; tiles from Treasury of Gela at, 219.
Orientation of principal buildings, 108; of Old Temple, as means of determining date, 28 f.

Paestum, temple of Poseidon, proportions of, 121, *n.* 1.
Parian marble, used for architectural sculptures of Heraeum, 146, *n.*
Parthenon, proportions of, 121 f.; pediment sculptures of, compared with pediments of Second Temple, 153; treatment of hair in heads from, 158; treatment of nude and drapery in sculptures from, 160; cyma from, compared with cyma from Heraeum, 160, *n.* 2; reclining Fate from, compared with torso of female figure from metopes, 188, compared with female figure from pediments, 192.
Pausanias, describes topography of the Heraeum, 10 ff.; describes Second Temple, 20 ff., 117, *n.* 1, 148; Argive genealogies of, 25 f., 29 ff.
Peacock, associated with Hera, 24; tail of, discovered by General Gordon, 65.
Pediments of Second Temple, described, 148 ff.; torso of female figure from, 191 f.; fragments from, 192 ff.
Penrose, computes date of earliest temple at Heraeum, 28 f.
Perseus, significance of, in Argive tradition, 35.
Phidias, and Polycleitus, 162 f., 168.
Phidon, revives supremacy of Argos, 37; date of, 61, *n.* 1.
Phigalia, sculptures from, compared with Heraeum marbles, 160.
Phorbas, in Argive tradition, 33.
Phoroneus, date of, 29, 32; tradition of, preserved at Heraeum, 31; probably united peoples of Argive plain, 32.
Pillar of limestone, earliest image of Hera, 42 f., 139.
Pins of bronze, 61 ff.; served as a medium of exchange, 61.
Pirasus, son of Argus, dedicated seated wooden image to Hera, 24, 33; influence of, upon terra-cotta figures, 44.

Pliny, distinguishes style of Doryphorus and Diadumenus, 169, *n.* 4; statements of, concerning Polycleitus, discussed, 173 ff.
Polycleitus, author of chryselephantine statue of Hera, 21; peculiar treatment of upper lip in statues of, 159, 179 f.; relation of, to Heraeum marbles, 162 ff.; and Phidias, 162 f., 168; characteristics of, 173 ff., 186.
Polygnotus, influence of, upon temple sculpture, 151.
Pompeii, baths at, compared with baths in Roman Building, 135.
Porphyry (Felsite), at the Heraeum, 100.
Poseidon, as rival of Hera, 4, *n.* 5.
Priene, cyma from temple at, compared with cyma from Heraeum, 160, and *n.* 2.
Priestess of Hera, Roman statue of (?), 141 ff.
Proetus, builder of walls of Tiryns, 26, 34 f.
Prosymna, part of territory of Heraeum, defined, 13 f.; possibly provincial name for arable land, 70.
"Proto-Corinthian" or Argive-Linear vases, preponderance of, at Heraeum, 50; characteristics of, 59 ff.

Quintilian, statements of, regarding Polycleitus, discussed, 173 ff.

Rangabé, A. Rizo, excavations of, at the Heraeum, 67 ff.
Revma-tou-Kastrou, river near Heraeum, identified with ancient Eleutherion, 14 ff.; connected with elaborate system of cisterns and aqueducts, 16 ff.
Richardson, R. B., Inscriptions from the Heraeum, 197 ff.; Stamped Tiles from the Heraeum, 216 ff.
Rings of bronze, 61 f.; served as a medium of exchange, 61.
Roman Building, described, 134 ff.

"Salaminian" shaft-tombs, 28, 69, 79.
Samos, derived cult of Hera from Argos, 5.
Sardis, burial of, 96.
Scamilli, traces of, in Second Temple, 120.
Sculptures from the Heraeum, 138 ff.; single figures, 140 ff.; architectural, 144 ff.; general style of, 153 ff.; period and school of, 160 ff.
Seasons, representation of, upon crown of Polycleitan Hera, 21 f.
Second Temple, built immediately after 423 B. C., 20; partially excavated by Rangabé, 67 f.; excavation of, 1892, 73; description of, 117 ff.; orientation of, 108, 119; proportions of, 129 f.; plan of, 125.
Sima, see Cyma.
Socles, ἀρχιτέκτων, 217, 219 ff.
South Stoa, discovered 1894, 79; completely cleared, 1895, 80 ff.; described, 127 ff.
Spits, dedicated at the Heraeum, 62.
Statues, before temple of Hera, 20; bases for, 20, 21; bases for, between Upper Stoa and Northeast Stoa, 112.
Steps below South Stoa, 130 f.
Stoae, 112 ff.; Upper, 112 ff.; Northeast, 114, ff.; South, 127 ff.; Lower, 136.
Strabo, does not mention relation between the Heraeum and Tiryns, 11, 85 f.; characterization of, 85 f.

Tarbell, F. B., theory of, concerning sculptures of Second Temple, 149 f.
Tegea, sculptures from, compared with Heraeum marbles, 160.
τελαμών(ν), meaning of, 201 f.
Terra-cotta images, 42 ff.; earliest types, 43; Tirynthian Argive type, 44; Mycenaean type, 44 ff.; "Dipylon" type, 46 f.; Advanced Argive type, 47; under oriental influence, 47; archaic Greek type, 47; of free style, 48; compared with bronzes and terra-cottas from Olympia, 48 f.; development of, runs parallel to development of vase-painting, 60.
Tertiary Period, formations of, in Argive plain, 92.
Theaeus of Argos, connected with inscription from Heraeum (?), 203.
"Theseum," proportions of, 121, *n.* 1, 122.
Tiles, marble, of Second Temple, 124; stamped, 216 ff.; date of, 219.
Tilton, E. L., Architecture of the Heraeum, 105 ff.
Tiryns, connection with the Heraeum, 10 ff., 25 ff.; walls of, compared with Cyclopaean wall at Heraeum, 26; chronological relation to Mycenae and Argos, 36.
Tirynthian-Argive terra-cottas, 44.
Torso of nude youth from metopes, discovered 1892, 73; described, 185 ff.; of warrior, from metopes, 187 f.; of female figure (Amazon?), from metopes, 188 f.; of female figure, from pediments, 191 f.
Trojan War, represented in sculptures of Second Temple, 20, 148 ff.

Unit of measurement in Second Temple, 120.
Upper Stoa, discovered in 1893, 74 f.; described, 112 ff.

Vases, 49 ff.; preponderance of Argive-Linear ("Proto-Corinthian") style at the Heraeum, 50; classification of, 50 ff.; Mycenaean, 51 ff.; Dipylon, 53; primitive, 55 f.; Argive-Linear ("Proto-Corinthian"), 57 ff.; development of, runs parallel to development of terra-cotta figurines, 60.
Volcanoes, action of, in burying ancient remains, 96.

Waldstein, C., General Introduction, 3 ff.; Marble Statuary from the Heraeum, 139 ff.

Waldstein, L., letter of, concerning anatomy of nude torso from metopes, 186, *n.* 5.
Walls, early, 108 f.
Washington, H. S., Geology of the Heraeum Region, 91 ff.
Water, action of, in burying ancient remains, 95 f.
Welcker, theory of, concerning sculptures of Second Temple, 149 f.
Well near Panagia chapel, possibly ancient Eleutherion, 16 ff.
West Building, discovered 1893, 76; excavated 1894, 78; described, 131 ff.
Wheeler, J. R., Inscriptions from the Argive Heraeum, 197 ff.
Wind, action of, in burying ancient remains, 94 f.; principal agent in burial of Heraeum, 97 f.

Xanthus, cyma of Nereid monument from, compared with cyma from Heraeum, 160, *n.* 2.
Xi, doubled, in inscription, 205.

Zeus, birth of, represented in sculptures of Second Temple, 20, 148 ff.

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THE ARGIVE HERAEUM

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IN TWO VOLUMES

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TERRA-COTTA FIGURINES, TERRA-COTTA RELIEFS, VASES AND VASE FRAGMENTS, BRONZES, ENGRAVED STONES, GEMS, AND IVORIES, COINS, EGYPTIAN, OR GRAECO-EGYPTIAN, OBJECTS

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PREFATORY NOTE TO VOLUME II.

In the preface to the first volume of this publication I expressed my regret at the delay in bringing before the world the results of our excavations which were completed in 1895. I also regretted that we were obliged to issue the first volume before the completion of the second. I then thought myself justified in announcing that the second volume would "follow within a few months." Circumstances over which I have had no control have extended this period of a few months to what will now in all probability exceed a twelvemonth. As in the case of the first volume I deplore this, not only because it has kept from the archaeological world the material which we have to offer for study, but also because full justice cannot be done to my collaborators, especially to Dr. Hoppin and Mr. Chase, whose work has been completed and in type for several years. Quite apart from the question of priority with regard to the antiquities we have excavated as well as the deductions we may have drawn from them, the work of my collaborators may not be justly appreciated when considered in the light of more recent discoveries, — I mean those that have been made since our excavations were completed. I have in mind especially the important discoveries made in Crete, Melos, and the more recent excavations of Thera. In any case, the complete and final publication of the work on those sites was not available for our purposes; while in the case of Crete, notably of Cnossos, the excavations themselves have not been brought to a termination, and the material furnished does not present itself in a form admitting of final conclusions and general deductions. Still, it may not seem right that, covering as we do similar fields of inquiry to that of recent work on other Aegean sites, we should not have considered at least the suggestions which they offer in the elaboration of our own material; and it may not be unfair to criticise us for not having redistributed all the type set years ago and rewritten all that had been written. But I venture to think that the scientific value of the archaeological material which we here offer in our publication, and even of the conclusions which we have drawn from the study of them, is increased by the fact that in our study we have confined ourselves to what was actually before us in our own material, and to the definitely published results of the work that had preceded us. Whether our results as here published are confirmed, rejected, or modified by those of future excavators and inquirers, our exposition can but gain in its claim to trustworthiness from not having been biased by premature side-glances at the foreshadowed results of contemporary excavation; while those who must elaborate the discoveries made since our own will be able to make the better use of ours in their independent presentation, even if this use should be to controvert our conclusions.

A similar explanation may be called for with regard to the fact that we have not

considered the work done since our excavations were completed on wider questions of historic and prehistoric archaeology, in which our own material must find a place as evidence. These include especially the wide and complicated problems of the earliest ethnology of the ancient world, together with the greatly expanded study of Hellenic and primitive mythology. The whole question of the Mycenaean age and the periods that preceded and followed it has entered a new phase, owing to the remarkable work done by such writers as Professor Ridgeway and Dr. J. G. Frazer, and to the cognate discoveries and inquiries of explorers and scholars like Professor Flinders Petrie. I have been directly criticised for not having, in my General Introduction in the first volume, clearly taken sides on the main issues raised by such important inquiries. Dr. Rouse, in his review of our first volume,[1] says: "Dr. Waldstein has not thought well to examine the bearing of this book (Professor Ridgeway's *Early Age of Greece*) on his Introduction, part of which might have been modified by it. He does indeed mention Professor Ridgeway in a footnote, not without approval; but there was time to have formed a more definite opinion than he gives on the new theories, whether to accept them or to reject." Now, all that I have urged above regarding the undesirability of entering into wider inquiry beyond the range of our own material in this publication applies still more emphatically to the questions raised by Professor Ridgeway's bold and far-reaching work. I wish in no way to discourage this stirring expansion of the study of classical antiquity into wider spheres, where it establishes its immediate relationship to general ethnology, — nay, to anthropology. The day may come when all our views of the early history of man, including the peoples of Ancient Greece and Rome, will present a picture containing a full and organic composition instead of the smaller groups and single portraits which we now have before us; and when the whole image of the past in the eyes of our posterity may gain in truth and even in clearness. But to my mind this day has not yet come; because the material for such wider generalization, which we may reasonably hope for in the future, is not yet to hand. Excavations, not only in Egypt, in Assyria, in the whole of Asia Minor, in the northern portions of Ancient Greece, in the islands of the Aegean, in Sicily and in Italy, but also in many other centres of Europe and other parts of the world, will have to yield their treasures of the past, before a great genius, happily arising, is prepared to fuse the disjointed ingots of evidence together, at the slow and steady fire of sober yet imaginative induction, into the great and malleable bar of precious metal out of which the monumental forms of truth are forged and cast. In the mean while, however, truth is advanced by a select few who form legitimate scientific hypotheses in presenting theories by means of which, for the time being, we can in some way grapple with the vast mass of material before us. But in presenting the results of our excavations of one site, and in drawing our conclusions from the material before us, we are emphatically not called upon to take sides on problems of much wider issue, the solution of which may ultimately be furnished by our facts and our exposition.[2]

[1] *Classical Review*, October, 1903, p. 368.

[2] I think it right to state that wherever my results and opinions tended to support those of Professor Ridgeway, they were on my part arrived at quite independently from him. Any suggestion I received from him has been duly acknowledged; just as he has acknowledged, both in his article in the *Hellenic Journal* in 1896, as well as in his book, the cases in which I enabled him to consider some of our material before publication. We are neither of us responsible for the other's views and conclusions.

Still, since the first volume was published, the final and official publication of *Troja and Ilion* has been issued by Dr. Dörpfeld and his collaborators. Furthermore, the work done and the wonderful results attained by Dr. A. J. Evans and his colleagues in Cnossos of Crete, as well as that of Professor Halbherr and his colleagues at Phaestos, though the excavations are not completed, have led to preliminary publications in which final conclusions have in some instances been drawn which bear directly upon essential points of our discoveries at the Argive Heraeum. As the conclusions thus arrived at by the excavators of Cnossos seem to militate against my main contention with regard to the Argive Heraeum, I feel that I must in a few words touch upon this question, even at the risk of being premature.

I claimed preëminent importance for the Argive Heraeum, because, as compared with sites like Troy and other early "classical sites" including Crete, it was one about which there could be no doubt in regard to its intrinsic association from the earliest times with what is to us Hellenic life; while, on the other hand, in contradistinction to Tiryns and Mycenae, which only present definite periods in the development of Hellenism, the Argive Heraeum was continuously, in all ages about which we know anything, an important centre of that life. I maintained, and I still maintain, that our excavations have yielded material giving undeniable proof that this site was occupied in what is commonly called the Neolithic period. By an oversight the first volume contained no illustrations of stone implements found in our excavations. I wish here to supplement this deficiency by inserting specimens of such Neolithic articles of use.



Stone Implements from the Argive Heraeum.

From the Neolithic age onward there is abundant evidence of a continuous occupation of that site, be it as a citadel or as a temple, down to Roman times. I wish here to emphasize more strongly than I have done in the first volume that the earliest walls and dwellings, together with the stone implements, confirm the tradition which I maintained [1]

[1] *Classical Review*, December, 1900, pp. 473 ff.

considered the work done since our excavations were completed on wider questions of historic and prehistoric archaeology, in which our own material must find a place as evidence. These include especially the wide and complicated problems of the earliest ethnology of the ancient world, together with the greatly expanded study of Hellenic and primitive mythology. The whole question of the Mycenaean age and the periods that preceded and followed it has entered a new phase, owing to the remarkable work done by such writers as Professor Ridgeway and Dr. J. G. Frazer, and to the cognate discoveries and inquiries of explorers and scholars like Professor Flinders Petrie. I have been directly criticised for not having, in my General Introduction in the first volume, clearly taken sides on the main issues raised by such important inquiries. Dr. Rouse, in his review of our first volume,[1] says: "Dr. Waldstein has not thought well to examine the bearing of this book (Professor Ridgeway's *Early Age of Greece*) on his Introduction, part of which might have been modified by it. He does indeed mention Professor Ridgeway in a footnote, not without approval; but there was time to have formed a more definite opinion than he gives on the new theories, whether to accept them or to reject." Now, all that I have urged above regarding the undesirability of entering into wider inquiry beyond the range of our own material in this publication applies still more emphatically to the questions raised by Professor Ridgeway's bold and far-reaching work. I wish in no way to discourage this stirring expansion of the study of classical antiquity into wider spheres, where it establishes its immediate relationship to general ethnology, — nay, to anthropology. The day may come when all our views of the early history of man, including the peoples of Ancient Greece and Rome, will present a picture containing a full and organic composition instead of the smaller groups and single portraits which we now have before us; and when the whole image of the past in the eyes of our posterity may gain in truth and even in clearness. But to my mind this day has not yet come; because the material for such wider generalization, which we may reasonably hope for in the future, is not yet to hand. Excavations, not only in Egypt, in Assyria, in the whole of Asia Minor, in the northern portions of Ancient Greece, in the islands of the Aegean, in Sicily and in Italy, but also in many other centres of Europe and other parts of the world, will have to yield their treasures of the past, before a great genius, happily arising, is prepared to fuse the disjointed ingots of evidence together, at the slow and steady fire of sober yet imaginative induction, into the great and malleable bar of precious metal out of which the monumental forms of truth are forged and cast. In the mean while, however, truth is advanced by a select few who form legitimate scientific hypotheses in presenting theories by means of which, for the time being, we can in some way grapple with the vast mass of material before us. But in presenting the results of our excavations of one site, and in drawing our conclusions from the material before us, we are emphatically not called upon to take sides on problems of much wider issue, the solution of which may ultimately be furnished by our facts and our exposition.[2]

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I claimed preëminent importance for the Argive Heraeum, because, as compared with sites like Troy and other early "classical sites" including Crete, it was one about which there could be no doubt in regard to its intrinsic association from the earliest times with what is to us Hellenic life; while, on the other hand, in contradistinction to Tiryns and Mycenae, which only present definite periods in the development of Hellenism, the Argive Heraeum was continuously, in all ages about which we know anything, an important centre of that life. I maintained, and I still maintain, that our excavations have yielded material giving undeniable proof that this site was occupied in what is commonly called the Neolithic period. By an oversight the first volume contained no illustrations of stone implements found in our excavations. I wish here to supplement this deficiency by inserting specimens of such Neolithic articles of use.



Stone Implements from the Argive Heraeum.

From the Neolithic age onward there is abundant evidence of a continuous occupation of that site, be it as a citadel or as a temple, down to Roman times. I wish here to emphasize more strongly than I have done in the first volume that the earliest walls and dwellings, together with the stone implements, confirm the tradition which I maintained [1]

[1] *Classical Review*, December, 1900, pp. 473 ff.

is given in Bacchylides (xi. 43–84), that the site of the Temple of Hera was also that of the Pre-Proetean citadel of Argos. On every side there is thus evidence of a Pre-Mycenaean civilization at the Heraeum; and in tradition, monuments, and minor works we have there an illustration of the systematic origin and organic growth and development of the Mycenaean civilization and the periods following it. No doubt there is evidence (which moreover we should *a priori* expect) of waves of foreign influence. But the main current of civilization leading up to the Mycenaean age, through it and beyond it, is central and continuous on the site of the Argive Heraeum. As far as our evidence goes, there is no reason for assuming that the Mycenaean civilization came to the Argolid from without, and that it was not continuously developed in that centre of ancient life.

Now, the conclusions which Dr. Evans has drawn from his Cnossian discoveries tend to make Crete the earliest focus of Mycenaean civilization from which it radiated to other parts of the world, including Greece Proper. Mr. Mackenzie, moreover, in a very ingenious and able article[1] has endeavored to prove this definitely by the evidence of the vases found at Cnossos. He maintains that the evolution of the Mycenaean ceramic style out of the Kamares ware, which again is evolved from Cretan Neolithic ware, is to be found in Crete. He further maintains that from Crete it found its way into the Argolid and the other parts of the ancient world. In short, it is maintained that Crete is "the cradle of the Mycenaean, and hence of Hellenic, civilization."

This seems to me improbable. Moreover, if it were true, my own conclusions with regard to the position of the Argive Heraeum would be unfounded. In spite of the prematureness of any attempt to arrive at a final decision on the nature of the Cnossian excavations while they are not yet completed, and before the objects there found have been subjected to a thorough examination in their completeness, I wish, in view of the partial publication of such conclusions on the part of the excavators, to enumerate briefly my doubts, and to commend them to the consideration of the Cretan explorers.

On the one hand, I do not doubt of the ample evidence as to the early settlement of the Cnossian and other Cretan sites in the Neolithic period, and I view favorably Dr. Evans's suggestion of a chronology reaching back much farther than we have hitherto been wont to conceive, namely, well into the third and even the fourth millennia B. C. As Dr. Dörpfeld has admitted, the earliest layers of Hissarlik distinctly point to such remote ages; and I have always expressed my belief that we should have to go much farther back when looking for the beginnings of early Greek civilization.

But, on the other hand, we are informed that the objects on the Cnossian site end with the Mycenaean period, that there are no objects belonging to a later date found there, and that therefore the life they reflect antedates that of the sites in Greece Proper, and that the Mycenaean civilization found in the latter is derived from Crete.

It is now some years ago[2] since I expressed the view that it is a mistake to believe that the Mycenaean and Geometric forms of art production ceased in all parts of Greece at the same time, and were superseded in the same period by the archaic forms of

[1] *J. H. S.* XXIII. 1903, pp. 157 ff.

[2] At a public meeting of the American School of Athens in 1892.

distinctly "Hellenic" character. It then appeared to me that, especially in ceramic art, the familiar polychrome, black-figured and red-figured vases never became the indigenous manufacture of certain portions of the ancient world; but that the Mycenaean and the Geometric forms of ornamentation as well as the so-called "Proto-Corinthian" (our later Argive-Linear) maintained themselves long into the historic period. Of this survival, this persistency of earlier styles, Crete seems to me a most probable instance. Though the Cnossian city reach far back into the remotest antiquity, and nothing later than Mycenaean ware has as yet been found there, we must at least await the completion of those excavations and those of other Cretan sites before we exclude the possibility, nay, the probability, that the latest of the "Mycenaean" remains at Cnossos reach far down to the gates of the historic Greek periods when elsewhere in the Hellenic world other Hellenic forms had been developed. The grounds for my doubt in the face of the mass of evidence which is even now adduced by the Cnossian excavators are based upon the intrinsic character of this evidence itself.

To begin with the more general point of view (though I cannot enter upon a minute critical estimate of the ethnological "evidence"), the confused tangle of ancient tradition concerning the early inhabitants of ancient Crete,—the Eteocretans, Pelasgians, Achaeans, Dorians, the Carians, Leleges, and their relation to the Lycians,— does not point to a unity of organization and civilization which could have produced the Mycenaean style foreshadowing the typically Hellenic art.

Moreover, I cannot feel that the literary traditions concerning the Minoan Cycle in any way warrant us in assigning a central position to it in the formation of Hellenic tradition. In its relation to the established and predominant body of earliest tradition it partakes of what I should like to call an "episodical" character. We can conceive of the organism of Hellenic myth and heroölogy retaining its organic character if this cycle were expunged. An intimate connection with Greece Proper, so as to suggest an essential influence in the form of civilization, is not manifest, certainly not as regards the Argolid. The only real point of union in this sphere is with Attica in the Thesean story; and here it is of a passing nature, indicating a war which implied no conquest or lasting occupation of the country. On the contrary, the balance of evidence in the tradition of Daidalos points, as regards art and style, rather to an influence from the mainland (in this case Attica) upon Crete, than from Crete on Greece Proper. This is quite different from the wave of influence which we can clearly trace in sculpture in the Daedalids, the so-called Ionian period, when we are at the very gates of the Historic period.[1] In fact, I cannot help feeling that the Minoan and Thesean tradition is comparatively late, as the complex elaboration of the tradition concerning the life and deeds of Theseus and his worship bears traces of *contaminatio*,[2] and points to a late date compared with the body of Greek myths and heroölogy.

There was one period when the influence of Crete upon the mainland of Greece was

[1] See my article on 'Dédale et l'Artémis de Délos,' *Rev. Archéologique*, December, 1881, pp. 321 ff.

[2] Cf. *Essays on the Art of Pheidias*, pp. 254 ff.

paramount, when accordingly the life in Crete, especially at Cnossos, must have been most thriving and have manifested itself in active art-production. This is the period which in the history of sculpture we call the Ionian period: when the craft of making temple-statues, the profession of the ἀγαλματοποιός was really established and introduced from these centres into Greece Proper. According to the literary traditions the chief centres whence this art sprung were Crete, Chios, and Samos. The activity of these schools of sculptors, immediately derived from Daidalos (in my opinion *the historical* Daidalos), and the most effective transmitters of this skill, were the Cretan Daidalidae, Dipoinos and Skyllis. These we can trace in their journeys through the Greek continent engrafting their craft at Sicyon, through the Peloponnesus, and as far north as the Aetolian Ambracia. Is it not startling to find that of this period, corresponding to the orientalizing wave in ceramic art in Greece, concerning which we have undoubted evidence as to the predominant position of Crete, not a single trace should have been found, especially in such centres as Cnossos? Is this conceivable? Are we not justified in asking for some reasonable explanation of such a singular phenomenon? And may I not suggest that, *however early some of the Cnossian remains and the earliest building may be*, some parts of the palace, especially its plastic decoration in stucco as well as some of the wall-painting, belong to this later historical period? We need not expect to find "archaic Greek" objects there, unless they were imported; but the native orientalizing style, which presents a continuous survival of the Cretan-Mycenaean art down to these later historical times, we can expect.[1]

But let us turn to the more specifically archaeological evidence.

(1) The architecture of Cnossos in its "Minoan" periods appears to me to be of a distinctly later date than the Cyclopean structures of Tiryns and of those parts of the Heraeum of the "Tirynthian" period — *a fortiori* the earlier walls of more primitive settlements. If the Cnossian walls correspond most closely to the sixth layer of Hissarlik-Troy, it stands to reason that the earliest Heraeum walls, which correspond to the first, second, and third layers of Hissarlik, are distinctly earlier. The walls of the Heraeum present a continuous development from these primitive beginnings through all ages to the later Roman period, and thus admit of no break or hiatus.[2]

[1] Since I wrote the above, my attention has been drawn to a passage which I overlooked in Mr. Evans's Report on the Excavations of the Palace of Knossos in the *Annual of the British School at Athens*, vii. (1900–1901), p. 118 ff. In it is an account of the find of "bone 'fish'" upon which were incised signs. "Out of twenty-one varieties, ten are practically identical, both in shape and position, with later Greek alphabetic forms, while four more are the same, though in a different position. Thus we have Δ, Λ, H, N, Ξ, Π, P, Y, + and a form approaching the digamma, etc. . . . Yet the Mycenaean date of these bone pieces is as well ascertained as anything found within the walls of the Palace." I must ask: What is the "Mycenaean date" here referred to as an established fact? The date of the "later Greek alphabet" we do know. Do not these later Greek objects speak rather in favor of my view, that the Mycenaean style survived in the Palace of Cnossos down to historical Greek times?

[2] Quite recently Professor Noack (*Homerische Paläste*, 1903) has pointed out that there is a "contrast" (*ein Gegensatz*) between the elevation and ground-plan of the "Greek" (Troy, Tiryns, Mycenae, and Arne) and the Cretan palaces. It seems strange to me that he should nevertheless consider the Greek palaces to have been influenced by the Cretan form, especially when he (pp. 27 ff.) refers the principle of the *breitstirnige Front* which distinguishes Cretan from "Greek" palaces to the East, Syria and Egypt, for its origin. This "oriental" element (contrasted with the "Greek" element) in the Mycenaean style of Crete would correspond exactly to what I maintain below characterizes the Cretan pottery of the Mycenaean age.

(2) Though the Terra-Cotta figurines from Cnossos have not yet been published systematically, occasional publications have given enough to show that they do not present that full and organic development which Mr. Chase and I have endeavored to demonstrate in this publication. None of the specimens from Crete which I have since seen represent the earliest beginnings as illustrated by our first and second class; nor do they show the continuity of development of our Tirynthian-Argive class out of its primitive beginnings. The causes for regret at the delay in our publication are exemplified by the fact that in the excellent publication of ancient Terra-Cottas just issued by Dr. Winter[1] he should have had to rely for the choice of his terra-cottas from the Heraeum upon my preliminary publication of our first year's work published in 1892, and that he has thus been unable to use for his general exposition the richest find of such objects, representing the most varied classes and presenting instances of such continuous development. In view of what I had put in the first volume[2] on the nature of the typically Mycenaean terra-cottas and their "ceramic" style, he could hardly have given to them a position earlier than our Tirynthian-Argive, still less than our primitive class.[3]

(3) As regards the pottery from Cnossos, we are already in possession of much fuller publication; and quite recently Mr. Duncan Mackenzie[4] in a very thoughtful and able article has made an attempt to give a systematic account of the evolution of Cretan pottery. The discovery of Mr. J. L. Myres established the fact that the pottery to which he gave the name Kamares ware is peculiar to, and characteristic of, Crete. Mr. Mackenzie has in a conclusive manner shown how the earliest form of this Kamares ware is immediately developed out of the primitive Neolithic pottery with incised patterns. Upon this follows a class of "early Minoan" ware which, according to him, is the precursor of the Mycenaean ware, out of which, in fact, he maintains the Mycenaean style grew. But this Minoan class presents two different, if not antagonistic, groups: the one monochrome, the other polychrome in its decoration. On his own showing (p. 171) the polychrome was the more favorite style of the two. Now he maintains that these two groups contend with one another, as it were, mingle their influence, the monochrome ultimately winning the day, and that the final result is the establishment of the Mycenaean style.

It is on this most important point with regard to the evolution of the Mycenaean style that Mr. Mackenzie's arguments have failed to convince me. For the whole nature of this polychrome style in the Kamares as well as in the Cretan-Mycenaean ware is to my

[1] *Die Antiken Terrakotten*, etc., by R. Kekule von Stradonitz, vol. III. 1903.

[2] Vol. I. p. 45.

[3] When Dr. Winter, *l. c.* (p. xxx.), says of these earliest classes: *Die Entstehungszeit auch der primitiv gebildeten Stücke dürfte kaum sehr weit über das achte Jahrhundert zurückreichen*, it is enough to point to the tray, examined by Mr. Chase, containing the objects from a tholos tomb at Mycenae in which a Heraeum terra-cotta of our second (Argive-Tirynthian) class was found, to prove that even our second class can at least not be later than the Mycenaean period. Cf. p. 10[2].

[4] *J. Hellen. Stud.* XXIII. (1903) pp. 157 ff. Other articles dealing with Cnossian pottery have appeared by Mr. D. G. Hogarth, *British School Annual*, VI. 1899–1900, p. 74; by Dr. A. J. Evans, *B. S. A.* VII. 1900–1901; by the same writer, *B. S. A.* VIII. 1901–1902, pp. 88 ff.

mind a most characteristic differentiation of Cretan pottery; one, moreover, which also differentiates it from the essential characteristics of the Mycenaean style as presented to us in the representative vases from the mainland of Greece and other sites. The very first specimens of Mycenaean vases found in Crete which were shown to me some time ago gave me the impression that they had local characteristics mixed up with the Mycenaean style which distinguished them from the general run of Mycenaean ware, and which I consider foreign to the main feature of Mycenaean ware, in some sense antagonistic to it. For want of a better word I should describe this differential characteristic as "orientalizing." I mean by that term those features of decoration which are found in a much later age, namely, the "orientalizing" period as illustrated in the Corinthian vases preceding the development of the archaic black-figured vases which are more purely Greek in style. The distinctive decorative features of this "orientalizing" style are a tendency towards the polychrome or piebald in color and towards a redundancy of ornaments in design. Plate XII. vol. XXII. of the *Journal of Hellenic Studies* will illustrate my meaning. The bronze age vase (No. 1 in the middle) from Zakro is in shape and general ornamentation distinctly Mycenaean. But the manner in which the partly naturalistic and other ornaments have been scattered about the whole body and neck of the vase (with a redundancy which has led German archaeologists to talk of such as "*Füllornamente*") is foreign to the essential characteristics of the pure Mycenaean vase and style. Yet we must not be astonished to find this characteristic in a Mycenaean vase from Crete when it is manifestly already the leading characteristic of the "early Minoan" style, the precursor of the Mycenaean period, in that island. The primitive Cretan painted vases published by Messrs. Hogarth and Welsh in 1901[1] with the polychrome and characteristic Kamares vases given on Plates VI. and VII. will illustrate this more fully; while the polychrome cups Nos. 1 and 2 on Plate VI. of Mr. Mackenzie's article will most strikingly illustrate the principle of the "*Füllornamente*" at the early stage of Cretan ware preceding the Mycenaean period. Thus, through a careful and sober study of the style in the Cretan remains themselves, without the intrusion of any further theory, I cannot feel on the one hand that this polychrome style could ever lead to the Mycenaean style, and, on the other hand, that the distinctive characteristics which it embodies could ever be entirely expunged from the ware manufactured in Crete at any period of its production. It is to be found in the Mycenaean ware of distinctly Cretan origin, and, in some form or other, the developed Kamares ware manifests a similar character. It is a significant and interesting fact that the place where these characteristics of Cretan style manifest themselves in a strong survival most clearly in a far later period is Naucratis, where we find the main features of the Kamares ware in the ornamentation of the interior of the characteristic Naucratite pottery.

With the evidence furnished up to this moment before us, it seems to me more probable that the active influence which won the day in Crete for the monochrome decoration contending with the polychrome style was the introduction of pure Mycenaean patterns

[1] *J. H. S.* 1901, pp. 78 ff.

which probably came into Crete from elsewhere, and which were never assimilated in their complete purity of character. This course in the history of ceramic decoration seems to me more probable than that the elements of the Mycenaean style were engrafted from Crete upon the ware of those centres, notably the Argolid, where the Mycenaean style has hitherto been supposed to have had its native home. As far as the Heraeum is concerned, there appears to me to be no room for Mr. Mackenzie's hypothesis. For we have there, as I have endeavored to trace it,[1] a continuous and organic development from the incised and early painted ornamentation of the Neolithic ware, through the dull-colored linear ornament with free-hand drawing of the early Mycenaean ware, to the fully developed forms of that style; and it appears to me that, out of the principle of free-hand drawing with spirals and curved lines and waved patterns in the dull-colored vases, the naturalistic ornament of the period of advanced ceramic art in the Mycenaean age naturally follows. There is no room in the chain of development for the intrusion of the peculiar early Minoan vase.

One important point Mr. Mackenzie has succeeded in making highly probable, namely, that the use of glaze-color in vase decoration, which is to be found at the very earliest period in Crete, may have originated there, and may have spread thence to other parts of the Mycenaean area. This is most probable in view of the large numbers of such specimens found in Crete; though all sites of the ancient world have not yet been excavated. But the introduction of such a technical innovation is readily made from one part of the world into another; not so the introduction of a characteristic style. The isolated specimens of distinctively Cretan Mycenaean ware which have been found in other parts of the Mycenaean world do not justify the conclusion of such a predominant influence on the part of the Cretan style, when we consider the paucity of these isolated specimens in their proportion to the pure Mycenaean ware found in the Argolid and elsewhere. We must wait for a careful differentiation between the peculiar Mycenaean ware found in Crete and the ware which is purely Mycenaean and corresponds to the predominant class of Mycenaean vases found in the Argolid, and, comparing their relative numbers, we must then ask whether there is not actual evidence which makes it probable that a great quantity of Mycenaean ware may have been imported into Crete from the Argolid. I may finally add that the evidence from Troy confirms me in this supposition; for we there find a pronounced and distinctive form of primitive ware with its characteristic material, shape, and ornaments; while the advent of the Mycenaean style in the sixth layer is foreshadowed in the adoption of spiral ornaments in the previous layer, which, though incised in the predominant system of Trojan vases, manifests a decorative feeling introduced and adopted from elsewhere. Dr. Dörpfeld says of these ornaments:[2] "Ebenso neu, aber nicht eigentlich troisch, sind die eingetieften Spiralen, welche in der Zeit der dritten Periode aufkommen." These designs correspond to the usual ornaments as we find them on the earliest dull-colored vases in the beginning of the Mycenaean period.

These remarks on the Cretan question in its relation to our discoveries may, as I have

[1] Vol. I. pp. 53 ff.

[2] *Troya und Ilion*, 1902, p. 279.

said before, be premature, and I am quite ready to retract the statements here made when fuller evidence warrants such a change. But as it was not proper to ignore the brilliant results and the excellent work of the Cretan excavators while presenting this volume to the public, it was not possible to consider them without giving such a critical estimate of the bearings of their work upon ours.

In the preface to the first volume I announced that "the principle which I followed in this publication was to allow each member intrusted with a department as much independence as possible;" and that "I have not stood in the way of expression of well-founded individual opinion for which each collaborator deserves the credit and retains the responsibility." This clearly applies to Dr. Hoppin's conscientious publication of the Vases. It will be seen from his own statement that there is a point on which we differ, namely, the question of the Argive-Linear ware. But upon examination it will be found that the difference is but slight and not of essential importance. Dr. Hoppin accepts what is, after all, the most important point, which I raised some years ago, and which to my knowledge had not been put before, namely, that the linear ornament (we might call it the geometric system of ornamentation — not to be confused with the later geometric period of Greek ceramics) preceded the naturalistic ornamentation of the Mycenaean vases. As far as I can ascertain, the more recent excavations in Crete and Melos and other ancient sites have strongly supported the view I urged in 1892. I have not yet come across any specimen of early dull-colored Mycenaean vases, nor of Neolithic vases from classical sites, which can be held to contain ornamentation that is not purely linear in character. Moreover, Dr. Hoppin admits that in the more advanced and wheel-turned vases of the Mycenaean period an important part of the ornamentation always remains linear; while in many of the small vases which he attributes to the Mycenaean period this linear system alone appears. Furthermore, in some small vases which he attributes to the Geometric period, the same principle applies; while, of course, in the succeeding period his own Argive-Linear, there is nothing but linear ornamentation. He can thus not deny my contention that in the early vases from the Heraeum the linear principle of ornamentation was never absent, from its beginnings in the incised Neolithic ware to the end of the Prehistoric period. Our difference of view thus narrows itself down to what is almost a difference of words. In view of the continuous presence of a certain system of ornament, its predominance at the earliest period, as well as at the latest, I have maintained that there was thus in the vase decoration a continuous Argive-Linear system at the Heraeum, the pedigree of which goes back to the Neolithic period, and the flourishing day of which is to be found in the later Argive-Linear period, formerly called Proto-Corinthian. Dr. Hoppin believes that my later Argive-Linear ware marks the degeneration of the Mycenaean system, and he proposes to restrict the term Argive-Linear to that later development. I am quite willing and quite ready to grant the main point of Dr. Hoppin's observation, namely, that the linear principle could not have asserted itself so strongly in the later period if the naturalistic element, predominant in the Mycenaean period, had not lost its vitality. But in view of the fact that in none of the previous periods had the linear

principle of decoration been eliminated, it cannot be correct to imply that there is any new departure in its more exclusive assertion when the Mycenaean style lost its vitality. Nor can it be correct to maintain that in this later period it originated out of the decline of the Mycenaean system immediately preceding it, when it was the predominant principle in the period preceding the Mycenaean, out of which this grew.

The conscientious work that Mr. DeCou has bestowed upon the publication of the Bronzes will be manifest to all readers. But they cannot realize the infinite care and persevering labor which, before he wrote, he bestowed for several years upon the cleaning and sorting of the confused mass of shapeless material with which he had to deal. He has chosen to avoid drawing any wider conclusions from his facts, — a course which is thoroughly justifiable and has much in its favor. But we should have also been grateful to him if he had given us the fruits of his experience in further historic and archaeological appreciation of his material, seeing that there is hardly any archaeologist alive who has had more experience in dealing with ancient bronzes than he.

Professor R. Norton's work is of high interest. If he is right in his classification, there are two distinct classes of engraved stones preceding the distinctly Mycenaean stones. This would furnish very strong evidence of artistic activity on our site before the developed Mycenaean period. Moreover, the numerical preponderance of the "new type Argive" stones over the Mycenaean stones is significant. I would suggest as an explanation of the comparative paucity of Mycenaean stones on this site, that this class of gem was not commonly used as a votive offering. They are thus generally found in graves, and were used in life as ornaments or amulets. At the same time, the presence of comparatively large numbers of stones on the Heraeum site antedating the Mycenaean period might be a confirmation of our view that in these earlier times the site was a citadel and not merely a sanctuary, as it became in the later period.

Mr. Lythgoe's publication of the Egyptian objects confirms the views he previously expressed, and which are embodied in the General Introduction in the first volume.[1]

CHARLES WALDSTEIN.

King's College, Cambridge, *February* 28, 1904.

[1] Since this has been in type, and nearly two years after Volume I. of this publication appeared, a review is published in the *Berliner Philologische Wochenschrift* (June 25, 1904, pp. 811 ff.) by Professor Furtwängler which is a caricature of all that a fair review ought to be. This I answered in No. 39, September 24, of the same journal. To all who are acquainted with the nature of the controversies carried on at present between us his action will be intelligible. In this long review he passes over the most important question of the Polycleitan character of the Heraeum sculptures — the main subject of controversy between us — with a few lines. Readers of Volume I. (pp. 184 ff., and elsewhere) will remember how fully I dealt with the question of the Polycleitan character of the sculptures, and how I controverted in detail Professor Furtwängler's dogmatic statement that "*all these sculptures have not the least relation to Polycleitus and his school.* . . . The head of Hera and most of the sculptures from the Heraeum known to me are certainly Attic." While denying all my views in his review, he inserts the phrase that two of the metope heads "*may be admitted to have something of Polycleitan style.*" What does this retreat from his former position mean? That two heads of this chief Argive temple, in which Polycleitus, the leader of the Argive school of sculpture, made his famous statue, are admitted by him to be Polycleitan in character. If any of the metopes show Polycleitan style, the leading art of the place was present in the sculptured decorations. As a matter of fact, with minor differences among each other (such as the Parthenon marbles and all other temple-sculptures show), all these Argive sculptures from this temple are of the same style.

C. W.

January 30, 1905.

CONTENTS

THE TERRA-COTTA FIGURINES

BY CHARLES WALDSTEIN AND GEORGE HENRY CHASE

PAGE

Introduction . . . 3
I. Primitive Argive . . . 16
II. Tirynthian Argive . . . 17
Group 1: Slightly Developed Plastic Ornamentation . . . 17
Group 2: Considerably Developed Plastic Ornamentation . . . 18
Group 3: Elaborate Plastic Ornamentation . . . 19
III. Mycenaean . . . 22
IV. Geometric . . . 23
V. Advanced Argive . . . 24
VI. Figures under Oriental Influence . . . 28
VII. Early Archaic . . . 29
Group A: Hand-made Figures . . . 29
Group B: Mould-made Figures . . . 31
VIII. Advanced Archaic . . . 38
IX. Free Style . . . 39
X. Animals . . . 39
XI. Various Objects . . . 42

THE TERRA-COTTA RELIEFS

BY CHARLES WALDSTEIN AND JOSEPH CLARK HOPPIN

Introduction . . . 47
Reliefs Nos. 1–10 . . . 49

THE VASES AND VASE FRAGMENTS

BY JOSEPH CLARK HOPPIN

Preface . . . 57
Abbreviations Employed . . . 59
Introduction . . . 60
Chapter I. Primitive Vases . . . 68
Chapter II. The Mycenaean Style . . . 71
Vases with Dull Decoration . . . 72
Fragments . . . 72
Vases . . . 74
Vases with Lustrous Decoration . . . 74
Class I., Not represented . . . 74
Class II., Division 1 . . . 78
Class II., Division 2 . . . 79
Class III., Division 1 . . . 81
Class III., Division 2 . . . 82
Flower Buds . . . 83
Circles, Diamonds . . . 84
Spiral Forms and their Development . . . 84

Flower Patterns . . . 85
Flower Branches . . . 85
Murex, or Purple Fish Patterns . . . 86
Linear and Textile Patterns . . . 86
Class IV. . . . 89
Birds, Animals, and Human Figures . . . 90
The Bee-Hive Tombs near the Heraeum . . . 91
Jugs with Handle . . . 92
Amphoras . . . 93
Three-handled Vases . . . 94
Teapot-shaped Jugs . . . 94
Pseud-amphora . . . 95
Kylixes . . . 95
Cups . . . 95
Miscellaneous Vases . . . 96
Saucers . . . 96
Bowls . . . 98
Jugs . . . 99
I. Without Decoration . . . 99
One-handled Jugs . . . 99
Three-handled Jugs . . . 100
II. With Decoration . . . 100
Two-handled Vase . . . 101
Chapter III. The Geometric Style . . . 101
Class I. Transitional Stage . . . 104
Class II. Purely Geometrical Types . . . 106
Class III. The Introduction of Human and Animal Motives . . . 107
A. Birds . . . 108
B. Horses . . . 109
C. Men . . . 111
D. Women . . . 114
E. Miscellaneous . . . 115
Other Miscellaneous Types . . . 115
Chapter IV. The Argive Style . . . 119
Class I. Early Argive . . . 124
Lekythoi . . . 124
Kalathoi . . . 124
Saucers . . . 125
Class II. Linear Argive . . . 126
Lekythoi . . . 126
Oinochoai . . . 128
Skyphoi . . . 132
Pyxides . . . 136
Covers . . . 139
Knobs . . . 140
Plates . . . 141
Miscellaneous Forms . . . 143
Kothons . . . 143
Ring-form Aryballos . . . 143
Jugs . . . 143
Openwork Vases . . . 144
Class III. Oriental Argive . . . 144
Lekythoi . . . 145
Oinochoai . . . 148
Skyphoi . . . 151
Pyxides . . . 153
Jugs . . . 153

Plates . . . 154
Alabastra . . . 155
Aryballoi . . . 155
Note on the Use of Applied Color in Certain Styles . . . 156
Mycenaean . . . 156
Dull Finish . . . 156
Lustrous Finish, Class III. . . . 156
Geometric . . . 157
Argive . . . 157
Polychrome Vases, or Decoration on a White Ground . . . 158
Chapter V. Miscellaneous Types . . . 159
Chapter VI. The Corinthian Style . . . 165
Old Corinthian Style . . . 167
Skyphoi . . . 167
Oinochoai . . . 168
Pyxides . . . 168
Covers . . . 169
Sugar-bowl Form . . . 170
Tripod Bowls . . . 170
Alabastra . . . 171
Amphora . . . 171
Aryballoi . . . 171
Askos . . . 171
Kylikes . . . 172
Plates . . . 172
New Corinthian Style . . . 172
Foreign Types . . . 173
Early Attic . . . 173
Cyrenean . . . 173
Chapter VII. Black- and Red-Figure Styles . . . 174
Black-Figure Style . . . 176
Kylikes . . . 176
Skyphoi . . . 177
Tripod Bowl . . . 177
Amphora . . . 178
Lekythos . . . 178
Plate . . . 178
Polychrome Ware . . . 178
Red-Figure Style . . . 178
Severe Style . . . 179
Later Style . . . 179
Polychrome Ware . . . 179
Chapter VIII. Vases in Relief and Later Vases . . . 180
Red Ware . . . 180
Megarean Ware . . . 182
Lamps . . . 183
Glass . . . 184
Byzantine . . . 184

INSCRIPTIONS ON VASES

BY THEODORE WOOLSEY HEERMANCE

I. Painted Inscriptions . . . 185
II. Incised Inscriptions . . . 185

THE BRONZES OF THE ARGIVE HERAEUM

BY HERBERT FLETCHER DE COU

Introduction . . . 191
Catalogue . . . 194
I. Fragments of Statues, Nos. 1, 2 . . . 194
II. Statuettes and Fragments of Statuettes, Nos. 3–7 . . . 194
III. Animals (free and attached), Nos. 8–51 . . . 197
1. Horses, Nos. 8–18 . . . 197
2. Deer, Nos. 19–21 . . . 200
3. Sheep, No. 22 . . . 201
4. Cattle, Nos. 23–28 . . . 201
5. Lions, Nos. 29, 720. 946, 2204 . . . 203, 235, 249, 293
6. Rodent, No. 30 . . . 203
7. Frog, No. 31 . . . 203
8. Serpents, Nos. 32–35 . . . 204
9. Birds, Nos. 36–51 . . . 204
IV. Ornament and Toilet, Nos. 52–1849 . . . 207
1. Pins, Nos. 52–948 . . . 207
A. Straight, Nos. 52–807 . . . 207
B. Safety, Nos. 808–946 . . . 240
C. Pseudo-safety, Nos. 947, 948 . . . 249
2. Needle, No. 949 . . . 250
3. Rings, Nos. 950–1546 . . . 250
A. Finger-rings, Nos. 950–970 *b* . . . 250
B. Bracelets, Nos. 971–974 . . . 251
C. Decorative, Nos. 975–1524 . . . 251
D. Structural, Nos. 1525–1540 . . . 263
E. Pieces of wire twisted into the form of rings, Nos. 1541–1546 . . . 264
4. Beads, Nos. 1547–1552 . . . 264
5. Pendants, Nos. 1553–1559 . . . 264
6. Mirrors and Mirror-handles, Nos. 1560–1589 *a* . . . 264
7. Objects in Sheet Bronze, Nos. 1590–1846 . . . 266
A. Diadems, Nos. 1590–1599 . . . 266
B. Disks, Nos. 1600–1718 *b* . . . 267
C. Binding strips, Nos. 1719–1747 . . . 269
D. Ornamented bands, Nos. 1748–1751 . . . 270
E. Coatings, Nos. 1752–1796 . . . 270
F. Rims, Nos. 1797–1800 . . . 272
G. Plates, Nos. 1801–1827 . . . 272
H. Cut ornaments, Nos. 1828–1832 *a* . . . 274
I. Figures, Nos. 1833–1838 . . . 274
J. Uncertain objects, Nos. 1839–1846 . . . 274
8. Leaves, Nos. 1847, 1848 . . . 274
9. Leather gear, No. 1849 . . . 275
V. Vessels, Nos. 1850–2251 . . . 275
1. Vases and Cauldrons, Nos. 1850–2217 . . . 275
A. Without shoulder, Nos. 1850–2019 . . . 275
B. With shoulder, Nos. 2020, 2021 . . . 286
C. With shoulder and neck, Nos. 2022–2047 . . . 286
D. Handles, Nos. 2048–2207 . . . 288
E. Connecting rods, Nos. 2208–2214 . . . 294
F. Ornaments, Nos. 2215–2217 . . . 294
2. Tripods and Standards, Nos. 2218–2234 . . . 294
A. Fragments of large tripods, Nos. 2218–2224 . . . 294
B. Low tripod standards, Nos. 2225–2230 . . . 295
C. Feet of standards, Nos. 2231–2234 . . . 296

3. Miscellaneous Forms, Nos. 2235–2251 . . . 296
A. Containers, Nos. 2235–2244 . . . 296
B. Handles, Nos. 2245–2251 . . . 297
VI. Implements, Utensils, Structural Pieces and Materials, Nos. 2252–2841 . . . 298
1. Parts of Vehicles, Nos. 2252–2255 . . . 298
A. Fragment of antyx, No. 2252 . . . 298
B. Small wheels, Nos. 2253–2255 . . . 298
2. Strigil, No. 2256 . . . 299
3. Bell, No. 2257 . . . 299
4. Cymbals, Nos. 2258–2261 . . . 299
5. Key, No. 2262 . . . 299
6. Knives, Nos. 2263–2272 . . . 299
7. Spits, Nos. 2273–2711 *e* . . . 300
8. Spear-butt, No. 2712 . . . 323
9. Pestle or Plektron, No. 2713 . . . 324
10. Hooks, Nos. 2714–2728 . . . 324
A. Free, Nos. 2714–2722 . . . 324
B. Attached, Nos. 2723–2728 . . . 324
11. Nails, Nos. 2729–2764 . . . 324
12. Button, No. 2765 . . . 327
13. Fasteners, Nos. 2766–2772 . . . 327
A. Wire, Nos. 2766–2769 . . . 327
B. Chain, Nos. 2770, 2771 . . . 327
C. Eyelet, No. 2722 . . . 328
14. Clamps, Nos. 2773–2776 . . . 328
15. Caps, Nos. 2777–2782 . . . 328
16. Centre-piece, No. 2783 . . . 328
17. Binding, No. 2784 . . . 328
18. Decorative Braces and Strips, Nos. 2785–2808 . . . 328
A. Straight applied braces, Nos. 2785–2787 . . . 328
B. Curved applied brace, No. 2788 . . . 329
C. Strips and rods, Nos. 2789–2808 . . . 329
19. Inserted Disks, Nos. 2809–2812 *a* . . . 330
20. Other Decorative Attachments and Fragments, Nos. 2813–2816 . . . 330
21. Supports, Nos. 2817–2818 *a* . . . 330
22. Rods, Nos. 2819–2821 . . . 330
23. Bars, Nos. 2822–2827 . . . 330
24. Ball, No. 2828 . . . 331
25. Castings, Nos. 2829–2841 . . . 331
A. Partially formed objects, Nos. 2829–2835 . . . 331
B. With accidental resemblances to various objects, Nos. 2836–2839 . . . 331
C. Formless, Nos. 2840, 2841 . . . 331
Appendix: Inscriptions on the Bronzes . . . 332

ENGRAVED STONES, GEMS, AND IVORIES

BY RICHARD NORTON

The Stones and Gems . . . 343
Class I. Prehistoric or Primitive . . . 345
Class II. New Type — 'Argive' . . . 346
Class III. 'Geometric' . . . 349
Class IV. Mycenaean . . . 350
Class V. Nondescript . . . 350
The Ivories . . . 351
Articles of Apparel or of Household Use . . . 353
Human or Animal Figures . . . 353
Miscellaneous Objects . . . 353

COINS FROM THE ARGIVE HERAEUM

BY HERBERT FLETCHER DE COU

Introduction 357
Catalogue 357
A. Greece (Autonomous and Municipal) 357
Addenda to Coins of Argos 359
B. Rome (Empire) 361
C. Rome (Eastern Empire) 362
D. Venice 363
E. Uncertain 363

EGYPTIAN, OR GRAECO-EGYPTIAN, OBJECTS

BY ALBERT MORTON LYTHGOE

Introduction 367
Catalogue 370

Index 375

ILLUSTRATIONS IN THE TEXT

PAGE

Stone Implements ix
Terra-Cotta Figurines. — Primitive Argive Type 16, 17
Terra-Cotta Figurines. — Tirynthian Argive Type, Group 1 . . . . . 17, 18
Terra-Cotta Figurines. — Tirynthian Argive Type, Group 2 19
Terra-Cotta Figurines. — Tirynthian Argive Type, Group 3 19–22
Terra-Cotta Figurines. — Mycenaean Types 22, 23
Terra-Cotta Figurines. — Geometric Types 23
Terra-Cotta Figurines. — Advanced Argive Types 24–27
Terra-Cotta Figurines. — Under Oriental Influence 28, 29
Terra-Cotta Figurines. — Early Archaic: Hand-made 29–31
Terra-Cotta Figurines. — Early Archaic: Mould-made 31–38
Terra-Cotta Figurines. — Advanced Archaic 38, 39
Terra-Cotta Figurines. — Free Style 39
Terra-Cotta Figurines. — Animals 40, 41
Terra-Cotta Figurines. — Various Objects 42–44
Vases and Vase Fragments. — Primitive Vases 70, 71
Vases and Vase Fragments. — Mycenaean Style: Dull Decoration 73, 74
Vases and Vase Fragments. — Mycenaean Style: Lustrous Decoration, Class II. 1 79
Vases and Vase Fragments. — Mycenaean Style: Lustrous Decoration, Class II. 2 80
Vases and Vase Fragments. — Mycenaean Style: Lustrous Decoration, Class III. 2 . . 83, 84, 87, 89
Vases and Vase Fragments. — Mycenaean Style: Lustrous Decoration, Class IV. 90, 91
Vases and Vase Fragments. — Mycenaean Style: Contents of Bee-Hive Tomb 92–95
Vases and Vase Fragments. — Mycenaean Style: Miscellaneous Vases 96–101
Vases and Vase Fragments. — Geometric Style: Amphora, etc. 117, 118
Vases and Vase Fragments. — Early Argive 124, 125
Vases and Vase Fragments. — Linear Argive 126–143
Vases and Vase Fragments. — Oriental Argive 146, 147, 151, 155
Vases and Vase Fragments. — Miscellaneous Types 159, 161
Vases and Vase Fragments. — Old Corinthian Style 171, 172
Vases and Vase Fragments. — New Corinthian Style 172
Vases and Vase Fragments. — Local Style 176
Vases and Vase Fragments. — Glass Vase 184
Vases and Vase Fragments. — Byzantine Ware 184
Inscriptions on Vases. — Painted Inscriptions 185
Inscriptions on Bronzes 332, 337, 338
Engraved Stones. — Argive Style 348, 349
Engraved Stones. — Geometric Style 349
Engraved Stones. — Mycenaean 350
Engraved Stones. — Nondescript 350
Ivories 351, 352, 354
Archaistic Scarab of Thothmes III. from Eleusis 369
Scarabeoid from Eleusis. Probably of Phoenician Origin 372
Porcelain Whorl 373

PLATES

*** *The descriptions of the Plates begin at the pages indicated, but the Plates themselves are grouped and placed as follows: Plates XLII.–XLVIII., after page 44; Plate XLIX., after page 54; Plates L.–LXIX., after page 188; Plates LXX.–CXXXVII., after page 340; Plates CXXXVIII.–CXL., after page 354; Plates CXLI., CXLII., after page 364; and Plates CXLIII. and CXLIV., after page 374.*

*** *Plates I.–XLI. are in Volume I.*

Plate		Page
XLII.	Terra-Cotta Figurines. — Primitive and Tirynthian Argive Types: Standing Figures	16
XLIII.	Terra-Cotta Figurines. — Tirynthian Argive Type: Seated Figures	17
XLIV.	Terra-Cotta Figurines. — Advanced Argive Type	24
XLV.	Terra-Cotta Figurines. — Advanced Argive Type: Heads	26
XLVI.	Terra-Cotta Figurines. — Early Archaic Type	33
XLVII.	Terra-Cotta Figurines. — Early Archaic, Advanced Archaic, and Free Style Types: Heads	31, 37
XLVIII.	Terra-Cotta Figurines. — Animals	23, 29, 39
XLIX.	Terra-Cotta Reliefs	47
L.	Vase Fragments. — Primitive Vases	69
LI.	Vase Fragments. — Mycenaean Style: Dull Finish, and Lustrous Finish, Class II. 1	72
LII.	Vase Fragments. — Mycenaean Style: Classes II. 2, and III. 1	79
LIII.	Vase Fragments. — Mycenaean Style: Class III. 2	83
LIV.	Vase Fragments. — Mycenaean Style: Class III. 2	85
LV.	Vase Fragments. — Mycenaean Style: Classes III. 2, and IV.	87
LVI.	Vase Fragments. — Geometric Style: Linear Motives, Horses, Birds, etc.	105
LVII.	Vase Fragments. — Geometric Style: Human and Animal Figures	111
LVIII.	Vase Fragments. — Geometric Style: Dipylon and Aeginetan	115
LIX.	Vase Fragments. — Argive Style	128, 130, 134, 138, 141, 148, 151, 152
LX.	Vase Fragments. — Local Style	156, 159, 164
LXI.	Vase Fragments. — Corinthian Style	167
LXII.	Vase Fragments. — Early Attic, Cyrenean, Red-Figure, Black-Figure, and Megara Ware, etc.	173, 177, 183
LXIII.	Vase Fragments. — Vases in Relief	180
LXIV.	Vase Fragments. — Various Argive Types (*in color*)	91, 134, 145, 147
LXV.	Vase Fragments. — Argive Style: Class III. (*in color*)	135, 150, 153, 158
LXVI.	Vase Fragments. — Geometric, Argive, and Local Types (*in color*)	153, 154, 157, 165
LXVII.	Vase Fragments. — Local Type (*in color*)	161
LXVIII.	Vase Fragments. — Fragments of a Polychrome Kylix (*in color*)	179
LXIX.	Vase Fragments. — Inscriptions Incised on Vases	185
LXX.	Bronzes. — Fragments of Statues, Statuettes	194
LXXI.	Bronzes. — Statuette	194
LXXII.	Bronzes. — Animal Figurines	197
LXXIII.	Bronzes. — Animal Figurines	199
LXXIV.	Bronzes. — Animal Figurines	200
LXXV.	Bronzes. — Animal Figurines	201
LXXVI.	Bronzes. — Animal Figurines	203
LXXVII.	Bronzes. — Animal Figurines	205, 207
LXXVIII.	Bronzes. — Animal Figurines, Straight Pins	205, 206
LXXIX.	Bronzes. — Straight Pins	210
LXXX.	Bronzes. — Straight Pins	215
LXXXI.	Bronzes. — Straight Pins	220
LXXXII.	Bronzes. — Straight Pins	224

LXXXIII. Bronzes. — Straight Pins 229
LXXXIV. Bronzes. — Straight Pins, Safety Pins 235
LXXXV. Bronzes. — Safety Pins 240
LXXXVI. Bronzes. — Safety Pins 242
LXXXVII. Bronzes. — Safety Pins 244
LXXXVIII. Bronzes. — Safety Pins, etc.; Needle, Finger-Rings 247
LXXXIX. Bronzes. — Finger-Rings and Bracelets 250
XC. Bronzes. — Decorative Rings 252
XCI. Bronzes. — Decorative and Structural Rings 259
XCII. Bronzes. — Structural Rings, etc.; Beads, Pendants, Mirrors 263
XCIII. Bronzes. — Mirrors 265
XCIV. Bronzes. — Mirrors 265
XCV. Bronzes. — Mirrors 265
XCVI. Bronzes. — Mirrors 265
XCVII. Bronzes. — Mirror 266
XCVIII. Bronzes. — Mirrors 266
XCIX. Bronzes. — Diadems, etc.; Disk 266
C. Bronzes. — Disks 268
CI. Bronzes. — Disks, Binding-Strips 269
CII. Bronzes. — Binding-Strips, Ornamented Bands, Coatings 270
CIII. Bronzes. — Coatings 271
CIV. Bronzes. — Coatings, Rims, Plate 271
CV. Bronzes. — Plate, Cut Ornaments 272
CVI. Bronzes. — Plate with Inscription. From Photograph 273
CVII. Bronzes. — Plate with Inscription. From Drawing 273
CVIII. Bronzes. — Figures, etc.; Leaves, Thongs, Plates 274
CIX. Bronzes. — Plates, Platters 275
CX. Bronzes. — Plates with Inscriptions 277
CXI. Bronzes. — Plates, Platters 277
CXII. Bronzes. — Platters, Saucers 278
CXIII. Bronzes. — Saucers 279
CXIV. Bronzes. — Saucers 281
CXV. Bronzes. — Saucers, Bowls 283
CXVI. Bronzes. — Bowls 284
CXVII. Bronzes. — Bowls, Suspension Vase, etc.; Pitcher, Jars 285
CXVIII. Bronzes. — Jars, Basin 286
CXIX. Bronzes. — Cauldron, Bosses, Horizontal Handles 287
CXX. Bronzes. — Horizontal Handles 288
CXXI. Bronzes. — Horizontal Handles 289
CXXII. Bronzes. — Horizontal and Vertical Handles 292
CXXIII. Bronzes. — Vertical Handles, Various Ornaments, Fragments of Large Tripods . . 293
CXXIV. Bronzes. — Fragments of Large Tripods, Small Tripod-Standards 294
CXXV. Bronzes. — Feet of Standards, Miscellaneous Vessels 296
CXXVI. Bronzes. — Miscellaneous Vessels and Handles, Various Implements and Utensils . . 297
CXXVII. Bronzes. — Various Implements, Spits 299
CXXVIII. Bronzes. — Spits 302
CXXIX. Bronzes. — Spits 309
CXXX. Bronzes. — Spits 313
CXXXI. Bronzes. — Spits 315
CXXXII. Bronzes. — Spits 319
CXXXIII. Bronzes. — Spits, Various Implements and Utensils 321
CXXXIV. Bronzes. — Various Utensils and Constructive Pieces 326
CXXXV. Bronzes. — Constructive and Decorative Pieces 329
CXXXVI. Bronzes. — Castings 331
CXXXVII. Bronzes. — Miscellaneous Addenda . . . 199, 211, 215, 217 *n.*, 251, 263, 266, 268, 269
CXXXVIII. Engraved Stones. — Classes I., II. 345, 347

CXXXIX. Engraved Stones. — Classes III.–V. — Ivories 349, 351
CXL. Ivories. — Articles of Apparel or of Household Use, Human or Animal Figures, Miscellaneous 352
CXLI. Coins. — Mainly Greek 357
CXLII. Coins. — Mainly Roman 360
CXLIII. Egyptian, or Graeco-Egyptian, Objects 370
CXLIV. Egyptian Objects. — From the Heraeum and from Aegina 373

THE TERRA-COTTA FIGURINES

THE TERRA-COTTA FIGURINES

By CHARLES WALDSTEIN and GEORGE HENRY CHASE

The great bulk of the Terra-cotta Figurines found at the Heraeum belong to what must be called pre-archaic Greek types. When we consider the find as a whole, we discover the following significant facts: —

I. The number of terra-cottas dating from the clearly historical periods of Greek civilization, i. e. the eighth century B. C. and later times, is very small. Out of 2865 figures preserved by us, not counting the ordinary figures of animals and small objects, which cannot be accurately classified, there are 2557 of pre-archaic style to 308 of archaic and later types.[1]

II. Among the terra-cottas of the archaic and later periods, a strikingly small proportion belong to the periods of advanced archaism and technical freedom; in fact, there are only fifty-two specimens of the former and two specimens of the latter.

Thus it will be seen that the closest parallelism exists between the main conditions of the find in terra-cottas and those of the vases, bronzes, and other objects; namely, the absolute preponderance of "prehistoric" material, the absence of works of the later Greek periods, and the fact that in the layers which we excavated, hardly any object is synchronous with the erection of the Second Temple or of a later period.[2]

The bulk of the find in terra-cottas was made in the black layer about and below the foundation walls of the Second Temple, as well as in the deposits on the southeast and southwest slopes of the Second Temple terrace.[3] But this general statement must be qualified by the following significant facts: —

1. We can assert as practically established the fact that no terra-cotta figurines were found beneath the surface of the upper or Old Temple platform.

2. Nearly all the specimens of the archaic and subsequent periods were found on the southern slope and the southeast corner and slope of the Second Temple (not in the black layer about the foundations of the Second Temple).

3. No prehistoric Greek specimens were found within the large West Stoa (one specimen of a draped female figure, belonging to the archaic period, was found here), and none at all on the site of the Roman Building.

The fact that no terra-cottas were found on the site of the Old Temple, *as it presented itself to us for excavation*, may lead us to any one of three conclusions: (1) that our terra-cottas belong to a later period than that marked by the site; or (2) that the custom of offering such figurines did not exist at the time when the temple *was built* —

[1] Cf. the Table, p. 9.

[2] Cf. General Introd. vol. I. pp. 37 ff.

[3] The custom of burying the smaller objects dedicated in temples, often apparently with great care (cf. the find of terra-cottas made by Orsi at Terravecchia near Granmichele in the Province of Catania, *Mon. Ant.* VII. pp. 201–274, esp. pp. 212 ff.), is one which has been illustrated by a large number of excavations upon Greek soil and elsewhere (cf. Homolle, 'Donarium' in Daremberg et Saglio, *Dict. des Ant. Gr. et Rom.* II. pp. 363 ff., esp. p. 371, note 130). In the case of the Heraeum, these offerings seem to have been used as "dry rubbish" in leveling up about the Second Temple, just as the offerings upon the Acropolis which were demolished by the Persians were later used in leveling that site.

that it was an aniconic period; or (3) that the site in question was not the natural repository for such votive offerings. We are inclined to one of the latter views.[1]

The two other points, while they show that the main sites excavated about the Second Temple were pre-archaic Greek, and that the Argive period of the Heraeum marks the change in the entrance from the west side to the south slope, also show that the main bulk of our terra-cottas belong to the pre-archaic period.

With such a mass of material before us, even in the selected specimens which we brought to Athens, our first care was to find some principle of classification. Two courses seemed open to us: We might classify our figures either according to their form and style, or according to their decoration. On mature consideration, the former method has appeared preferable, especially as a classification by decoration must confine itself almost entirely to plastic decoration — the paint having disappeared entirely from many of our figures. Moreover, no systematic chronological development could be established on the decorative principle only. At the same time, the principle of classification by decoration has seemed to us a sound one, and we have employed it as a secondary principle for distinguishing a few classes,[2] and for drawing distinctions within one class.[3]

Class I. — Such, then, being our principle, our first class, which we have called "Primitive Argive," consists of a great number of very rudely modeled figures, to which, in fact, the term "modeled" can hardly be applied. They are really nothing but a small lump of clay, elongated, then pinched in the middle to indicate a waist, the resulting projection above forming two stumpy arms, while another pinch at the top indicates the head. This head soon develops into the well-known bird-like head, in which the beak-like nose is formed by a compression of the clay between the two fingers of the "modeler."[4] These are the characteristics of the earliest specimens.[5] Later, two disks are plastered to the sides of the "beak" to represent the eyes,[6] a lump of clay is added to form a kind of pilos or cap,[7] or a strip of clay wound about the head forms a stephane,[8] while in many figures one or more short strips of clay are added to the back of the head to represent the hair[9] (exceptionally the hair is indicated in a few early specimens by grooves at the back of the head). So one sometimes finds — though this is quite exceptional — a figure in which the artist has tried to imitate nature more closely, in which two lumps of clay are added to the front of the figure to represent the breasts;[10] the fall of the drapery in front is rudely reproduced by one or more grooves,[11] or a cutting across the "beak" forms a rude mouth.[12] But even in the most advanced figures of this class, the development is exceedingly slight, and the body always remains essentially a rude lump of clay.[13]

Class II. — A distinct advance is made when the rude standing figure is converted into a seated one.[14] The technical change, indeed, is not great; the standing body is simply

[1] Cf. General Introd. vol. I. pp. 39 ff.

[2] Such, for instance, as the Mycenaean and the Dipylon classes, in which the influence of vase painting is very apparent.

[3] Cf. p. 11.

[4] It should be noted that this lack of modeling is partially accounted for by the fact that nearly all our figures are female (cf. p. 13, note 5). The drapery of such figures in the early stages does not admit of fine distinctions in modeling, such as the indication of the legs, the torso, and its articulations.

[5] Cf. No. 1.

[6] Cf. Nos. 2, 3, 5, etc.

[7] Cf. No. 3.

[8] Cf. Nos. 4, 5, etc.

[9] Cf. No. 4.

[10] Cf. No. 8.

[11] Cf. No. 9.

[12] Cf. Nos. 9 and 10.

[13] We might have subdivided this first "Primitive" class into three minor classes, according to the differences enumerated above. But we find it desirable at this stage not to confuse by too minute classification, leaving it to future inquiry to accentuate these, or even to establish further distinctions.

[14] Cf. Nos. 12 ff.

bent at the middle and supported by two stumpy legs,[1] a process which prevails down to the latest period of this class. Even in the most advanced specimens, the employment of a separately made chair as a support is rare. But although this change is of little importance technically, it is of great importance historically. It marks the change in the conception of the goddess which is represented in the traditions of Argos by the story of Pirasus and his seated figure of Hera dedicated at Tiryns.[2] Now it is a striking fact that, aside from the Heraeum and Tegea (of which we shall speak later), Tiryns is the place where these seated figures have been found in greatest numbers. We have therefore ventured to call the figures of this class "Tirynthian Argive," and we believe that they represent roughly the period of the supremacy of Tiryns in the Argive plain.[3]

In these "Tirynthian Argive" figures, we have a long and complicated development of the drapery; while the figures themselves, although constantly increasing in size, remain, with very few exceptions, a mere oblong piece of clay, bent forward into the seated posture, and the heads still have the "bird face." This development of the drapery even affects the standing type, and we find in our later standing figures a tendency to elaboration which corresponds closely to the development in the seated types. The various steps in this development are exceedingly interesting, and we shall revert to them later. Suffice it here to say that, for practical purposes, we have divided our "Tirynthian Argive" class into three subordinate groups, basing our distinctions upon the greater or less elaborateness of the ornamentation.[4]

The next step in the development of this type of terra-cotta figurines is the change from the "bird face" to the human face, with all the features carefully distinguished. But before we take up this class of "Advanced Argive" figures, we must speak of two intermediate classes, which we have set apart by reason of their decoration as well as their form and style. We mean the Mycenaean and Geometric classes.

Class III. — The "Mycenaean" terra-cottas differ from those of the Primitive and Tirynthian Argive classes in that they show a quite different technique, both in regard to the fineness of the clay and in regard to ornamentation. A careful comparison of the Mycenaean figures with the preceding classes, moreover, brings out the following facts:

(1) They are numerically very weak — there are only sixty-three fragments of Mycenaean types among our selected terra-cottas, and of these ten are fragments of animals.[5]

(2) *Prima facie*, the schematic outline of these figures, ending below like the foot of a vase, and above with the *polos*, like the neck of a vase,[6] the whole crossed by round or pelta-shaped body and arms,[7] is much less naturalistic than the figures of the primitive and Tirynthian Argive classes. On the other hand, the detail workings of the body, such as the indication of the breasts,[8] show far greater knowledge and skill in modeling than we find in Classes I. and II. Both these facts would seem to indicate that we are dealing with a later class of figures. Moreover, the color decoration shows the same use of glaze color, applied in a similar manner, that we find in Mycenaean vases. We thus consider this class of terra-cottas an intrusion into the general and continuous scheme of Argive terra-cottas, which began and ceased during the period of our first and second classes, but which, strangely enough, was but very little influenced by the Primitive and Tirynthian Argive styles, and exercised little influence on them.[9]

[1] As it happens, the most primitive specimen of the seated type which we found (No. 12) is provided with a separate four-legged chair, but this is exceptional.

[2] Cf. Paus. II. 17. 5, and General Introd. vol. I. p. 44.

[3] Cf. General Introd. vol. I. p. 44.

[4] Cf. p. 11.

[5] Cf. the Table, p. 9.

[6] Cf. No. 67.

[7] Cf. Nos. 65, 67, 70.

[8] Cf. especially No. 65.

[9] See, however, our remarks on No. 70.

The peculiarities of this Mycenaean style, we believe, are due to the fact that it was essentially a development from vase painting, perhaps even the work of the Mycenaean κεραμεύς, not of the coroplast proper.[1] We believe this for these three reasons: —

These figures are never found, to our knowledge, except where there are also Mycenaean vases (whereas our "Primitive" figures were found together with all classes of vases).

The conventionalization of the figure, notably at head and foot, points to ceramic art.

The use of glaze color is certainly borrowed from vase painting.

In this matter of the use of glaze color, we have come to a question which requires much greater amplification, and which will lead us much further afield. In the figures of Classes I. and II. (as also, to a less extent, in the later classes), the whole figure was usually covered with a white, chalky slip, and upon this was applied a simple line decoration in red and black.[2] This white slip, owing to its flaky character, has in many cases been entirely lost,[3] and is often preserved only in cracks and holes.[4] The isolated instances in which figures of Classes I. and II. have a glaze color applied directly to the clay[5] seem to us to point to an introduction of this specifically Mycenaean technique to contemporary specimens of those classes. Indeed, we have a number of specimens in which the white coat is used for the upper part of the body, while the lower part is given a solid color, applied directly to the clay,[6] and this is common in the later, "Advanced Argive" specimens.[7] The use of the white slip, however, appears to have been the specifically coroplastic method, which obtained throughout all periods down to the latest times[8] — a fact which strongly confirms our contention that these terra-cottas (in which the color is applied directly) were made under the influence of the κεραμεύς.[9]

Class IV. — The single female figure (No. 75), which we have assigned to a distinct "Geometric" class, seems to us to warrant this distinction by reason of its peculiar decoration, which, with its bands of geometric ornaments, divided by straight lines, is very similar in plan to the decoration of the large Geometric vases which form this class. Its position in the series is determined by the fact that the face was evidently of the primitive "bird-faced" type. With this figure we have grouped another distinctly Geometric specimen (No. 76), a horse of the type so common upon the covers of Geometric vases.[10] The two specimens do not represent the entire influence of the Geometric style upon our terra-cottas. Traces of that influence are to be seen in a number of other figures, especially among the animals and small objects,[11] but the two which we have placed together are the only ones which are so distinctly Geometric in character as to warrant a place by themselves. In fact, though at Olympia a large number of Geometric animals (especially horses) have been found, it is a noteworthy fact that we can hardly identify any plastic representations of the human figure with this period. It appears to us that this

[1] Cf. General Introd. vol. I. pp. 45 ff.

[2] Cf. Nos. 7, 11, 12, 13, 14, etc.

[3] Cf. Nos. 1, 2, 3, 5, 9, etc.

[4] It is this perishability of the white slip, doubtless, that led Schliemann to speak so often of "unpainted" terra-cottas from Tiryns (cf. *Tiryns*, pp. 150 ff.). In the light of our discoveries, there can be no doubt that nearly all, if not all, the figures from Tiryns were originally painted.

[5] Cf. Nos. 10, 21, 25.

[6] Cf. Nos. 4, 24.

[7] Cf. p. 7.

[8] Cf. Martha, in the introduction to his *Catalogue des Figurines en Terre Cuite du Musée de la Société Archéologique d'Athènes.*

[9] This matter of the interaction of vase painting and coroplastic art has never been carefully worked out. The early Tanagra "κανδῆες," for instance, show distinct traces of the Geometric influence. The white Athenian lekythi, on the other hand, seem to be a result of the application of coroplastic technique to vase painting.

[10] Cf. Rayet et Collignon, *Hist. de la Céramique Grecque*, p. 33, fig. 21.

[11] Cf. Nos. 248, 272.

arises out of the constructive nature of that style, which is essentially decorative and conventional — in so far un-naturalistic and opposed to plastic art.

Class V. — A very marked advance in the development of the terra-cotta figurines found at the Heraeum from the earliest primitive type onward is made when once the "bird face," which obtains in all the classes hitherto mentioned, is superseded by the human head.[1] This type we have called "Advanced Argive." The figures of this class are plainly a development from our second, Tirynthian Argive, class. Even in the most advanced specimens, with very few exceptions,[2] the bodies of these figures are essentially the same flat oblong which we found in the figures of the Tirynthian Argive class. The heads, on the other hand, are of archaic type, with wide, staring eyes, large ears placed high, the mouth often having the well-known archaic smile.[3] Most important of all, these heads, almost without exception, were made in moulds. Here, then, we see the beginnings of that use of moulds which later became the prevailing mode, and revolutionized the manufacture of terra-cottas. Another characteristic of this class of figures is the tendency to elaborate ornamentation, of which we shall have more to say later.[4]

In the colored decoration of the figures of this class, also, we find again the two processes which we have before noted. Thus, while the use of the white slip as a basis for decoration in color is always retained for the upper parts of the figure, and in many cases is used for the entire figure as well,[5] in the large specimens the color is often applied directly to the chiton, usually a red stripe at the top, and dark brown for the rest of the garment.[6]

It is also a noteworthy fact that in these figures the seated type prevails almost exclusively. Indeed, the only standing figure which we have ventured to place among the advanced Argive specimens differs from them so widely that we have even doubted whether it ought not to be placed in a category by itself. This is No. 107, a figure which again illustrates the influence of ceramic upon coroplastic art. This figure has traces of a human head. In the upper part of the figure there is a certain degree of naturalness, but the lower part of the body is emphatically conventionalized, without any attempt at naturalism. The roundness is so complete that it at once suggests mechanical work, such as the turning of the potter's wheel. The use of the wheel is still further confirmed by the application of the brush in making the accurate parallel lines in groups of three, and the broad line at the waist around the cylindrical body. The ornamentation, as well as the structure of the figure, thus points to the influence of the κεραμεύς, belonging to the period of the fully developed Argive-Linear,[7] as the Mycenaean terra-cottas showed the influence of the Mycenaean κεραμεύς. We have placed it among the advanced Argive figures on the ground that it has a human head and a conventionalized body,[8] and that the decoration would mark it as belonging to about the period to which we must assign our advanced Argive figures.

Class VI. — Our next class, "Figures under Oriental Influence," consists of a small number of figures which are marked out as a separate category by their subjects — two lions, heraldically grouped, winged female figures like the so-called Niké of Archermus,[9]

[1] Cf. Nos. 77 ff.

[2] Figures like Nos. 90 and 91, in which the bodies have a considerable thickness and there is some attempt to represent the waist, are extremely rare.

[3] Cf. Nos. 93 ff.

[4] Cf. pp. 10 ff.

[5] Cf. Nos. 79 and 80.

[6] Cf. Nos. 86, 90, 91, 92.

[7] Cf. pp. 126 ff.

[8] It should be noted, however, that the conventionalization in this figure is quite different from that which we have seen in the Mycenaean figurines.

[9] Cf. Collignon, *Hist. de la Sculpture Grecque*, I. p. 136, fig. 68.

several figures of the Egyptian Bes, and a number of representations of the Sphinx.[1] With these we have grouped a small figure of a horseman,[2] which is certainly of Egyptian manufacture. It would of course have been possible to catalogue these figures under our next class of archaic figures, as they are all archaic in style; but it has seemed to us more desirable to collect in one category the specimens which distinctly show the influence of the East, just as in vases this influence is recognized in the so-called Corinthian vases. It is the analogy of the history of vases, moreover, in which the Corinthian style follows the Argive style, that has led us to place this category immediately after the class of advanced Argive figures.[3]

Class VII. — With the beginning of the historical Greek period, the art of terra-cotta making becomes more dependent upon sculpture, and from this time on, its history is better known and more easily traceable. To the beginning of this archaic period we must assign a number of figures rudely made by hand,[4] which, although they still preserve a high degree of conventionalism, manifest an endeavor on the part of the coroplast to imitate more closely the forms of the human body. Their conventionalism, moreover, is the conventionalism with which we are familiar in the early statues of Greek art (the *ξόανα*), beginning with the Nicandra statue from Delos.[5] We have therefore classed these figures, and those immediately following them, as "Early Archaic," but have subdivided them into two groups: —

Group *a*. — Hand-made Figures. These we regard as in a certain sense a transitional type from the earlier, hand-made Argive figures to the moulded figures of the archaic period proper.

Group *b*. — Mould-made Figures. The archaic period proper begins with the introduction of the use of moulds for the whole figure, the second step — the modeling of the heads of the advanced Argive figures being the first — toward the developed terra-cotta figurine of later centuries. Here we have, at the beginning of the class, a very interesting transitional specimen,[6] in which we have a mould-made torso, decked out at the shoulders with two disks,[7] such as are common in the primitive and advanced Argive types.[8] After this we have a long series of both seated and standing figures, in which we can trace, as in the work of the sculptor, the struggle of the artist with his material, the gradual advance in the representation of the folds of the chiton,[9] the development of the arms from mere stumps to well-modeled members of the body,[10] which are raised to the breast,[11] and carry attributes.[12] The final period of this development corresponds to the period of the well-known female figures on the Athenian Acropolis.[13]

As to color technique, we find in the archaic terra-cottas the same two opposing influences which we have noted in our earlier classes. The great majority of our archaic

[1] Cf. Nos. 108–116.

[2] Cf. No. 117.

[3] Here, too, might be placed Nos. 207–213, which also show traces of Oriental influence; but it seemed better to catalogue them among the archaic heads, for in them it is the archaic, rather than the Oriental element, which is most characteristic.

[4] Cf. Nos. 118–131.

[5] Cf. Collignon, *Hist. de la Sculpture Grecque*, I. p. 120, fig. 59.

[6] Cf. No. 132.

[7] Cf. p. 10.

[8] It should be noted, however, that this figure is almost without a parallel in our finds. For the most part, these archaic terra-cottas were very little influenced by the Argive type, although the two classes must have existed side by side for a considerable period.

[9] Cf. Nos. 153, 157, 163, etc.

[10] Cf. No. 157 with No. 148 and No. 154.

[11] Cf. Nos. 153, 155.

[12] Cf. No. 165 ff.

[13] Cf. Collignon, *Hist. de la Sculpture Grecque*, I. pp. 341 ff., figs. 170 ff.

figures show numerous traces of the white slip, which we have described as the typically coroplastic method of decoration;[1] but some have paint applied directly to them, at least in parts.[2]

Class VIII. — Of terra-cottas belonging to a later age than this early archaic period we have but few specimens, and these are almost exclusively heads of figures and votive busts, in which, owing to the very gradual development of the archaic style, no sharp line of demarcation can be drawn between early and later specimens. We believe, however, that the forty-two specimens[3] which we have included in an "Advanced Archaic" class will be found to mark a higher stage of development than is attained by any specimens of Class VII.

Class IX. — Finally, we come to the last group, which, as has been said above, is represented by a remarkably small number of specimens. In regard to Nos. 239 and 240, there can be no doubt that they belong to the best period of Greek terra-cotta work, and we have not hesitated to place them as "Figures of Free Style," in a separate class.

The figures of animals and of various small objects are in general so rudely modeled that they do not lend themselves to any classification based upon style.[4] We have therefore been led to adopt the manifest principle of classification according to subject, and thus to distinguish two further classes, — "Animals" (under which we include figures of men and women seated upon animals) and "Various Objects."

So much for the principles upon which we have based our classification, and the general development of the manufacture of terra-cottas at Argos, as represented by our finds. But, as we have already suggested, these classes are by no means of equal importance. Nothing, indeed, is more instructive than the table of the numerical strength of the classes, which is as follows: —

NUMBER OF SPECIMENS IN THE VARIOUS CLASSES.

I. Primitive Argive	122	VII. Early Archaic	249
II. Tirynthian Argive	1961	VIII. Advanced Archaic	42
III. Mycenaean	63	IX. Free Style	2
IV. Geometric	2		
V. Advanced Argive	409	Animals	715
VI. Figures under Oriental Influence	15	Various Objects	433

That is, of 2865 specimens, not counting animals and various objects, 2492, or over 85 per cent., are figures of the flat-bodied type, with either the "bird face" (2083 specimens) or with the archaic head which is its successor (409 specimens). It is the preponderance of this type which justifies us in calling these specimens distinctively Argive. They have been found, it is true, in other places, notably at Tiryns[5] (as we have recognized by our qualification of a certain class of them as Tirynthian), at Haghios Sostis (Tegea),[6]

[1] Cf. Nos. 132, 135, 140, etc.

[2] Cf. Nos. 137, 138, 163, etc.

[3] Cf. Nos. 227–238.

[4] The only exception which we have made to this rule is in the case of Mycenaean and Geometric animals, where the decoration leaves no possible doubt as to their place.

[5] Cf. Schliemann, *Tiryns*, pp. 149 ff., figs. 76–96.

[6] Cf. Lenormant, *Gaz. Arch.* 1878, pp. 42–48; Pervanoglou, *Nuove Mem. dell' Ins.* II. pp. 72–76, pl. vi.; Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 541 ff. These Tegean figures present the closest parallels to our Argive types. They occur with human as well as with "bird faces," and the later specimens are often very elaborately decorated. They were found in such numbers as to preclude the theory that they were imported from Argos. We must conclude, therefore, that the art of the coroplast passed through much the same development at Tegea as at Argos,

and sporadically elsewhere.[1] But nowhere have they been found in such numbers or exhibiting such a clearly marked development as at Argos. They are hardly found at all at Mycenae.[2] We feel justified, therefore, in giving them the distinctive name of "Argive."

But if these Argive figures form the great bulk of our find in terra-cottas, they also present the most serious and difficult problems of all our figures. How, for instance, shall we designate the great mass of plastic ornament which is so characteristic of the later "advanced" type, and also, to some extent, of the earlier specimens? In the preliminary publication of the Heraeum finds, it was suggested that the elaborate ornaments upon the shoulder of the Argive figures might be bunches of flowers, having some reference to Hera Antheia.[3] But further consideration has convinced us that, for the great mass of our figures, this view is untenable. In the first place, the large ornaments for which this interpretation was suggested [4] are plainly developed from the small round bosses of earlier figures.[5] The beginning of this development is very plain in one specimen,[6] where the wedge-shaped ornament at the shoulder is no more than an elongated boss. Now in many later specimens [7] this boss develops into a regular fibula of the "four-leaved clover" type,[8] which Helbig [9] proposes to identify with the Homeric ἔλιξ.[10] Moreover, in one fragment [11] we have the most evident attempt to represent a bronze fibula of the usual "bow" shape;[12] while with the elaborate ornaments like

or (what seems to us more probable) that the coroplasts of Tegea were strongly influenced by those of Argos, and that there was an intimate connection between these two places (cf. Ridgeway, *J. H. S.* XVI. [1896], p. 99, on the close connection between Tegea and Argolis); Curtius, as Ridgeway remarks, pointed out (*Gr. Gesch.* I. p. 156) that Nauplius is represented as the servitor of the king of Tegea. We may also point to the fact that the priestess Chrysis sought and found refuge at Tegea after leaving the Heraeum (Paus. III. 5. 6).

[1] At Bathos, on a spur of Mt. Lycaon (cf. Bather and Yorke, *J. H. S.* XIII. [1893], p. 228); in Cyrenaica (cf. Heuzey, *Fig. Ant.* pl. xl. 1); at Thisbe in Boeotia (cf. *Arch. Anz.* 1895, p. 220, 4); one or two specimens were found by the English School at Phylakopi in Melos. There are a few specimens very similar to ours (all with human faces) in the museum at Syracuse, but the Sicilian terra-cottas are for the most part of a far less primitive character than those of Argos; cf. the figures from Agrigentum (cf. Kekulé, *Ant. Terrakotten*, II. pp. 17, 18, figs. 21-27), from Gela (*ibid.* p. 22, fig. 47), and the specimens from the vicinity of Terravecchia near Granmichele, published by Orsi (*Mon. Ant.* VII. pp. 239 ff., figs. 31, 32). Finally, a number of vases from Cyprus in the British Museum, of Geometric style, are decorated with figures very similar to our advanced Argive type; they are placed on the neck of the vase, and hold in one hand a small jug which served as a spout to the vase.

[2] A tray in the Central Museum at Athens (numbered 3071) contains a number of figures of the type of our primitive and advanced Argive specimens, which came from a tholos tomb near Mycenae. Dr. Tsountas informs us, however, that the roof of this tomb had fallen in and the contents had been disturbed, so that no sure conclusions can be drawn from them. The tray contains —

Primitive standing figures, no ornamentation	2
Primitive standing figures, one necklace	5
Primitive sitting figures, no ornamentation	1
Primitive sitting figures, one necklace	2
Primitive sitting figures, two necklaces	8
Primitive heads	2
Advanced sitting figures	1
Advanced heads	2
Warriors	11
Animals	6

Animal with bird face (probably a centaur).
Fragment of a Mycenaean vase.

Several of the figures have pins of the "dumb-bell" shape (cf. No. 84), while the "clover-leaf" type (cf. *supra*) also occurs. One of the advanced heads has a calathos and a double taenia, closely resembling Nos. 101–104. We think it right to draw attention to the fact that this beehive tomb, even if it was disturbed, contained no object *later* than the Mycenaean period. *In so far*, the presence of the "Tirynthian Argive" terra-cottas would place them not later than the Mycenaean period.

[3] Cf. Waldstein, *Excavations of the American School at the Heraeum of Argos*, 1892, p. 20. Cf. No. 52, where the ornament certainly suggests a mass of flowers.

[4] Cf. Nos. 83 and 93.

[5] Cf. Nos. 27, 28, 40.

[6] Cf. No. 43.

[7] Cf. Nos. 54, 90, 91.

[8] Cf. Montelius, *La Civilization Primitive en Italie*, pl. xxi. 286–289; Furtwängler, *Olympia; Ergebnisse*, IV. pl. xxi. 360.

[9] Cf. *Das Hom. Epos aus den Denkmälern erläutert*, 2te Aufl. pp. 280 ff.

[10] But cf. Studniczka, *Beit. zur Geschichte d. Gr. Tracht*, *Abh. d. Arch.-Epig. Seminars d. Universität Wien*, VI. p. 114, footnote.

[11] No. 82.

[12] Cf. Montelius, *loc. cit.* pls. i., iv., v., viii., ix.

No. 84, we may compare fibulae found in our own excavation,[1] and others published by Montelius.[2] It thus appears evident that these ornaments are intended to represent simply the pins by which the Doric chiton was fastened at the shoulder, whether this be the straight pin (περόνη), or the fibula of the clover leaf or bow form; and we have therefore had no hesitation in so designating them in our descriptions. There is room for doubt, perhaps, in the specimens which have only the simple round boss, whether this boss is meant to represent a fibula of the ἔλιξ type or a simple straight pin. We have used the term "pin," therefore, to include both fibulae and περόναι.

The bands across the breasts of our figures [3] are in many cases evidently meant to represent necklaces, and we can perhaps distinguish in some cases between the ἴσθμιον, or close-fitting necklace, of Homer [4] and the ὅρμος,[5] or long necklace. Certainly the many cases in which we find bands ornamented with pendants [6] can be meant for nothing but necklaces. But very often our band extends only from shoulder to shoulder, and appears to have some intimate connection with the pins which we have just discussed.[7] Schliemann [8] called such ornaments simply "bands," while Perrot,[9] in describing a figure very similar to No. 34, calls the ornament "a sort of scarf." In the later development,[10] when the figures are adorned with a large number of these bands, the lower one is usually so wide, and is stretched so straight from shoulder to shoulder, that there can be no doubt that it is the fold of the Doric chiton.[11] Moreover, in specimens like No. 30, the band is plainly the fold of a garment arranged like the ἱμάτιον in later works.[12] It must be said, however, that even in fairly early specimens the "bands" often become subordinated to a general principle of elaborate ornamentation, so that it is impossible to assign a given ornament to one class or the other, to say categorically, it *is* a necklace or it *is* a fold. In the most advanced Argive specimens [13] we find a further complication in the elaborate plastic ornaments across the breast, which seem to be made in imitation of lace or metal adornments attached to the fold itself, or possibly of long chains, such as the women of modern Greece wear on feast days. But even if they are such, they are plainly developed from the earlier necklace and simple fold, and these are the most characteristic forms of decoration of the Argive type. It is the constant recurrence of these bands which has led us to adopt, as convenient subdivisions of our Tirynthian Argive class, the following categories: [14] —

1. Figures with slightly developed plastic ornamentation at shoulder (no decorative bands).

2. Figures with considerably developed plastic ornamentation (one band).

[1] Cf. p. 242, No. 852.

[2] *Loc. cit.* pls. xvii. and xviii.

[3] Cf. Nos. 27 ff.

[4] Cf. Nos. 27 and 36. Compare also *Od.* xviii. 300: —

ἴσθμιον ἦειπεν θεράπων, περικαλλὲς ἄγαλμα.

And *Schol.*: —

ἴσθμιον· ἰσθμὸν ὁ τράχηλος. ἴσθμιον οὖν περιτραχήλιον κόσμον περικεκλεγμένον, οὐ μέντοι κοσμήματά τινα ἐκπρεπέμενα. καὶ ἄλλως· περιτραχήλιον, ἔνθεν καὶ παρίσθμια· διαφέρει δὲ τοῦ ὅρμου. τὸ μὲν γὰρ προσέχεται τῷ τραχήλῳ, ὁ δὲ ὅρμος κεχάλασται.

[5] Cf. *Hym. Hom.* v. 10 (Gemoll): —

ἀειρῇ δ' ἀμφ' ἀτάλῃ καὶ στήθεσιν, ἀργυφέοισιν
ὅρμοισι χρυσέοισι ἐκάσμιον, οἷοί περ αὗται
Ὧραι κοσμέεσθην χρυσάμπυκες.

And *ibid.* iii. 88: —

ὅρμοι δ' ἀμφ' ἁπαλῇ ἀειρῇ περικαλλέες ἦσαν
καλοί, χρύσειοι, παμποίκιλοι ὡς δὲ σελήνη
στήθεσιν ἀμφ' ἁπαλοῖσι ἐλάμπετο, θαῦμα ἰδέσθαι.

[6] Cf. Nos. 40, 42, 80, etc.

[7] Cf. Nos. 28, 34, 37, 40, 41, etc.

[8] Cf. *Tiryns*, p. 156.

[9] Cf. Perrot et Chipiez, *Hist. de l'Art*, VI. p. 750. The figure is No. 344, taken from Schliemann, *Tiryns*, p. 359, fig. 159.

[10] Cf. Nos. 86, 93.

[11] Cf. Studniczka, *loc. cit.* pp. 6 ff.

[12] Cf. Nos. 163, 164, 175.

[13] Cf. Nos. 90 and 91.

[14] For the advanced Argive terra-cottas no such distinction seems necessary, as they are practically all of the elaborately ornamented type.

3. Figures with elaborate plastic ornamentation (two or more bands).

It will be found, in general, that increasing elaborateness of ornamentation at the shoulders of these figures corresponds to the multiplication of bands, and that both advance with the growth of perfection in technique.[1]

It remains to note the other decorative elements, which, although they are not of sufficient importance to form a basis for classification, yet display a very considerable development in our series of figures, — namely, the earrings, the hair, and the headdress. Of the earrings not much need be said. They begin comparatively late in the series (the small size of the earlier figures naturally precludes the use of such ornaments) with much-decorated "bird-faced" figures, and develop from the simple disk to the disk with a central boss,[2] the rosette,[3] and even the disk with pendant.[4]

The development of the hair is more complex. In the earliest figures, as we have before stated,[5] the hair is not represented at all, or at best it is marked by a few parallel grooves at the back of the head or by two or three strips of clay attached to the back of the head and falling to the shoulders, most usually notched or twisted. Then one or two strands are brought forward over the shoulders,[6] while a corkscrew curl is added to each side of the forehead.[7] The use of the simple mass to represent the hair as it falls to the shoulders[8] seems to be a later development. It is employed almost exclusively in the most advanced heads,[9] where the front hair is usually represented by two notched bands,[10] or by large curls which leave between them a wide parting.[11] In a few cases we find over the forehead a row of small, separate curls, similar to those commonly given to archaic heads in stone.[12]

In the headdress we find a development very similar to that which we have noted for the hair. Very early in our series, as we have already pointed out,[13] we find a simple band of clay wound about the head to represent the stephane. This is often so broad and high that it might more properly be called a polos or stephanos.[14] To this is often applied a single boss,[15] or a double boss,[16] or even a number of bosses in a row, with perhaps a double boss in the middle.[17] In one case[18] the edge of the stephane is pierced with holes, apparently to receive metal ornaments. But the stephane (stephanos, polos) is not the exclusive headdress of our figures. As the coroplast came to model larger and taller figures, he evidently began to feel the need of a more stately headdress to correspond to the elaborate adornment of the body. Thus we find that in the later figures the most common headdress is the high, bell-shaped calathos.[19] This is usually bound about the bottom with a taenia, and is often decorated at the top with bosses.[20] Most remarkable, of all, however, are the horn-like adornments which are the final decoration of this later type.[1] These consist of a strip of clay, bulging slightly at the extremities, placed about the calathos in such a way that the two ends rise above it in front. A boss is sometimes added to each end for further effect,[2] and between the "horns" a disk or rosette is quite usual.[3] We are inclined to regard these "horns" as an attempt to represent plumes of some sort, although we know of no parallel cases.[4]

[1] It is not always possible to use the number of bands as an absolute criterion, for there are cases in which other decorative elements, such as applied layers of clay, representing the garments (cf. Nos. 56, 60, 61), or the infants which the *κουροτρόφοι* figures hold (cf. Nos. 37, 57, 58, etc.), take the place of the bands. But, for the most part, the distinction of the classes according to the number of bands upon the figures will be found to have been carried out with considerable strictness.

[2] Cf. No. 53.

[3] Cf. Nos. 54, 104.

[4] Cf. No. 94.

[5] Cf. p. 4.

[6] Cf. No. 26.

[7] Cf. Nos. 25, 45, etc.

[8] Cf. Nos. 42 and 51 (which are of the Tirynthian Argive class), where the mass is crossed by grooves.

[9] Cf. Nos. 93, 94, 97, 98, 99, etc.

[10] Cf. Nos. 94, 97.

[11] Cf. Nos. 101–104.

[12] Cf. No. 105.

[13] Cf. p. 4.

[14] Cf. Nos. 40, 53.

[15] Cf. Nos. 7, 33, 53, 96.

[16] Cf. Nos. 44, 97.

[17] Cf. Nos. 40, 42, 98, 99.

[18] Cf. No. 54.

[19] Cf. No. 94.

[20] Cf. Nos. 98, 99.

Another point which naturally arises in connection with these "Argive" figures is the question, Whom do the figures represent? Now the most striking fact about them (as, indeed, about the human figures in general) is the great preponderance of female forms. In the whole find of terra-cottas, there are but sixty-six figures which are male beyond a doubt, and of these forty-eight belong to the well-known type of the mounted warrior, and eight to the type of the Egyptian Bes.[5] This fact would naturally lead us to the conclusion that our female figures represent the chief goddess of Argos, Hera, and many arguments can be brought to support this interpretation. Thus, the great majority of our Argive figures are seated, and we know from the Pirasus story and from Pausanias's account of an early image of Hera, as well as from his account of the statue of Polycleitus, that Hera was conceived at Argos as a seated divinity. The headdresses which we have noted upon our figures, stephane, polos, stephanos, and calathos, belong to the regular wardrobe of Hera;[6] while as a goddess of childbirth[7] she could be represented with an infant in her arms. But such arguments as these are extremely fallible; and for the early time, especially, we certainly cannot postulate any such fixity in the functions and attributes of the goddess as such statements imply. The proof of this fact is not far to seek; for in Tegea, where, as we have already stated,[8] we find figures exactly similar to all classes of our Argive terra-cottas, these figures were dedicated to Demeter.[9] The headdresses that we have mentioned are found in the Tegean figures, as in those of Argos, and they are by no means the exclusive property of Hera. The *κουροτρόφος* figures are much better explained as human mothers,[10] especially as Hera (and the divinities of the Argive plain in general) is rarely represented with an infant in her arms,[11] and the epithet *κουροτρόφος* for Hera rests upon very doubtful authority.[12] Again, the groups of two seated females,[13] while they might be taken as Hera and Hebe

[1] Cf. Nos. 100–104.

[2] Cf. No. 103.

[3] Cf. Nos. 100, 104.

[4] Mr. De Cou suggests that these adornments may be borrowed from the headdress of Isis, and that the disk or rosette may then represent the sun. If this theory be correct, we should then find in these figures another trace of Oriental influence.

[5] It may be said that the early numbers of our series are so rude as to be practically sexless. But the early development of the hair and the ornaments, which points distinctly to female figures, as well as the great preponderance of female figures in the later types, make it practically certain that our early figures, also, are meant to represent females.

[6] Cf. for the polos, the well-known head from Olympia, Bötticher, *Olympia*, p. 237, fig. 44; for the stephane, Overbeck, *Kunstmythologie*, pls. ix., x.; for the stephanos, *ibid.* vol. III. Hera, Münztafel ii.; for the calathos, *ibid.* Münztafel i. Nos. 1–9.

[7] Cf. on Hera Eileithyia, General Introd. vol. I. p. 8.

[8] Cf. p. 9, note 6.

[9] Cf. Lenormant, *Gaz. Arch.* 1878, pp. 44 ff.

[10] On the analogy of the woman with an infant on her back (No. 39), the woman kneading bread (No. 24), and the performers upon musical instruments (Nos. 21, 22, 23). This is the interpretation which we are inclined to favor for these *κουροτρόφοι* figures. A third possibility, that these figures are modifications of the Oriental Astarte, seems to be excluded by the fact that they bear such close resemblance to the Argive type, and are plainly only a development of it.

[11] Cf. O. Müller, *Handbuch d. Arch. d. Kunst*, § 353, 1; and Tsountas, *Ἐφημερὶς Ἀρχαιολογική*, 1888, p. 170.

[12] Suidas, *s. v.* "Ὁμηρος, gives the verses: —

κλῦθί μοι εὐχομένῳ, κουροτρόφε, δὸς δὲ γυναῖκα,
τήνδε νέων ἀνήνασθαι φιλότητα καὶ εὐνήν,

and adds: —

ἀφίκετο εἰς Ζάμον καὶ εὗρε γυναῖκα Κουροτρόφῳ θύουσαν, καὶ λέγει τὰ ἔπη τάδε.

Bernhardy (cf. Suid. *ed.* Bern. II.[1] p. 1101) refers *κουροτρόφῳ* to Apollo. Athenaeus (XIII. 592) refers the verses to Sophocles, and says the poet calls on Aphrodite.

[13] Cf. Nos. 59–62.

or Hera and Eileithyia, seem to us, to judge from the analogy of similar groups in later times, to be better taken as representations of the Earth-mother and her daughter, the later Demeter and Koré.[1] In the case of these Argive terra-cottas, therefore, we can only say that they prove to us the existence at the Heraeum, in very early times, of a cult of the primitive female divinity, the real "great mother of the gods," whether we call her Ge, or Demeter, or Aphrodite, or Cybele, or Hera, or perhaps even Athena or Artemis. She was early conceived as a seated figure, and this conception strongly influenced the ideas of later times, when men began to call her Hera, and to reproduce her image in wood and stone. Finally, the use of exactly the form that is employed to represent the goddess for figures that are certainly human[2] proves conclusively that we are here dealing with one of those early types which are already familiar to us in the seated figures from Branchidae, the "Apollo" figures from all over the Greek world, the standing types of the Acropolis, and many other works.

We have dwelt thus at length upon the "Argive" figures both because they form the most important and characteristic part of our find, and because this type has never heretofore been subjected to the careful study which it deserves, and which, fortunately, our numerous finds of early figures in so unbroken a series enabled us to make.

The remainder of our finds belong, for the most part, to well-known types, and can be dismissed in a few words. Of the Mycenaean figures, the greater part belong to the common type with round or pelta-shaped bodies. The large bull's or cow's head is, we believe, unique in terra-cotta, although this subject is common enough in Mycenaean art in other materials.[3] The paucity of figures of this class of terra-cottas at the Heraeum is very striking, in view of the large numbers of them that were found at Mycenae and at Tiryns, and suggests the explanation that these figures were not regarded as appropriate offerings at this particular temple. The Argive style, in fact, had become invested with a hieratic character, and was regarded as the proper object of votive dedication at the Heraeum.[4] The same remark holds true of figures of Geometric style, of which the paucity is very striking, in marked contrast to the early figures of Boeotia, which are distinctly Geometric.[5]

So, too, even our 283 figures of the Archaic class form a strikingly small proportion of the find, when we consider the prevalence of this class on other early sites.[6] Here, indeed, the figures themselves seem to show that these archaic terra-cottas are not a natural Argive product. We do not mean to say that they were not made at Argos.

[1] Cf. the argument, pp. 22 f.

[2] Cf. Nos. 21–24, 39.

[3] Cf. the parallels cited on p. 23.

[4] So at Athens, in early times, the fashion seems to have been for figures of Athena of archaic type (cf. Winter, *Arch. Anz.* 1893, pp. 141 ff.). At Corcyra the popular offering was apparently a figure of Artemis (cf. Lechat, *B. C. H.* XV. [1891], pp. 1 ff.). At Tegea the Argive type was later superseded by an archaic hydrophoros type (cf. Pervanoglou, *Nuove Mem. dell' Ins.* II. pp. 74 f.). In Sicily archaic figures carrying a pig are found in great numbers (perhaps connected with the cult of Demeter and Koré; cf. Liénard, *Gaz. Arch.* 1880, pp. 15 ff.; Caylus, *Réc. d'Ant.* vol. VI. pl. xxxvii.). On the subject of "fashions" in terra-cottas, cf. the remarks of Paris upon the terra-cottas of Elateia, *B. C. H.* XI. (1887), pp. 405–444.

[5] Cf. Heuzey, *Fig. Ant.* pl. xvii. 3; Jamot, *B. C. H.* XIV. (1890), pp. 207 ff., figs. 1, 2, 5, and pl. xiv.; Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 213 ff. These figures are interesting as examples of coroplastic art developing on lines parallel to those which it followed at Argos, yet differing from Argive art in many particulars. In Boeotia, as at Argos, the flat, conventional body of the "bird-faced" type was retained long after the advent of the archaic style of head. In marked contrast to the Argive figures, the standing type is, in Boeotia, the prevailing one, and the ornamentation is almost entirely painted, not plastic. The technique, too, is ceramic, rather than coroplastic, i. e. the paint is applied directly to the clay.

[6] Cf. the excavations cited in note 4, and especially those conducted by Orsi in Sicily — at Megara Hyblaea (cf. *Mon. Ant.* I. p. 689, esp. pp. 913 ff.), and at Terravecchia (*ibid.* VII. p. 201, and esp. pp. 216 ff.).

The large number of replicas[1] would prove that most of them were made there, if such proof were necessary; but they seem to be the product of outside influences, rather than the result of native development.[2] So we find a number which show traces of the schools of Rhodes and of Cyprus.[3] So, too, the great majority of these archaic figures are standing types, whereas the conception of Hera which prevailed at the Heraeum was, as we have seen, that of a seated figure. Moreover, a number of these archaic figures are shown by their attributes to be representations of goddesses in no way connected with Hera, or even hostile to her. Such are the figures of Artemis and Aphrodite.[4] For the rest we can only say that the archaic figures without attributes may be meant for statues of Hera, and in many cases, doubtless, were so thought of by the donors; but in many others they may have been meant for priestesses or even persons unconnected with the cult of the goddess, who offer their own image to her. We are again dealing, that is to say, with a type, and all attempts to dogmatize at this stage on the subjects of these figures are futile.[5]

The animals display all the variety usually found in temple offerings. They include horses (both with and without riders), bulls, dogs, pigs, bears, cocks, and birds, and even some less common types, such as the centaur, the serpent, the tortoise, the monkey, and the bull attacked by a lion. It does not seem possible that even the lively imagination of the Greeks can have thought of any very definite association of all these animals with the goddess. But few of the animals represented are sacrificial, so that the idea that they are "substitutions"[6] for actual sacrifices is in most cases excluded. At best this explanation can hardly apply to more than the cows,[7] the rams, and the pigs. In most of our figures, therefore, we are inclined to see only examples of the cheap kind of offerings which were sold at the entrance to the temple, — offerings whose value depended not so much upon their intrinsic worth as upon the spirit of the donor.

The same must be said of most of the "various objects" which we have catalogued in our last class. The rough pear-shaped weights[8] and the cones,[9] — which were probably meant for use upon the loom,[10] — the spools,[11] and the rude oven[12] — probably from a baking scene — are not inappropriate offerings to a female divinity like Hera. So, too, the dish of cakes[13] and the numerous fragments of tables[14] are doubtless to be regarded in the light of banquets offered to the divinity. The flower-like disks,[15] which occurred in

[1] Cf. Nos. 141, 144, 148, 149, 177, 188, 200, 231.

[2] Cf. the analogy in the proportion of black-figured vases to those of the Argive-Linear style, pp. 60, 174.

[3] Cf. Nos. 207–211, 212, 213.

[4] So we interpret the figure holding a bow and a deer (No. 179), and the figures which have in their hands a hare (Nos. 176–178), or a flower (Nos. 166, 174), or a fruit (Nos. 172, 173, 197), or a dove (Nos. 166–171, 199, 200). Some of these, to be sure, may be connected with the cult of Hera, as the figure with the wreath (No. 175) probably is. Thus we know that Hera as Eileithyia was represented with bow (cf. vol. I. p. 8); and the fruit of Nos. 172, 173, and 197 may be a pomegranate (cf. Philost. *Apoll. Tyan.* IV. 28: ἡ ῥόα δὲ μόνη φυτῶν τῇ Ἥρᾳ φύεται). But such attempts are certainly far-fetched, and if we consider the wide distribution of these types (see the references under the separate numbers), the connection with Hera does not seem probable.

[5] Cf. Furtwängler, 'Aphrodite,' in Roscher, *Lex. d. Myth.* p. 410: "Doch ist der Typus ein so allgemeiner, dass er auch für andere Gottheiten, ja auch sterbliche, die Votivgaben darbringen, benützt wurde."

[6] Cf. Perrot et Chipiez, *Hist. de l'Art*, VI. p. 818.

[7] It is interesting to note that the large Mycenaean bull's or cow's head (No. 72) has a hole in the top, which may have been meant to receive a bronze axe (cf. the references given in the catalogue, p. 23).

[8] Cf. Nos. 290, 291.

[9] Cf. Nos. 283–285.

[10] Pottier and Reinach (*La Nécropole de Myrina*, pp. 248 ff.) explain these cones as cakes "by substitution," and give the literature of the subject. The older interpretation of them as loom-weights seems to us to be preferable.

[11] Cf. Nos. 286–289.

[12] Cf. No. 279.

[13] Cf. No. 267. Cf. also the mould, No. 277.

[14] Cf. Nos. 268-270.

[15] Cf. Nos. 281, 282.

such numbers, have reference, perhaps, to Hera Antheia. But the appropriateness of the foot with a sandal[1] (which seems too elaborate to have been part of a human figure), of the object which we have called a tree,[2] of the whorls[3] and the rings,[4] it is impossible to see. Here, then, we doubtless again have examples of small, inexpensive offerings, which were turned out by the score by the coroplasts, and served to satisfy those among the poorer classes whose means did not permit them to present more elaborate offerings.

But these, after all, are points of minor importance. The chief interest and value of our find of terra-cottas lies in the fact that they reveal to us — in the figures of the "Argive" classes — the existence of an artistic tradition which began long before the period of the distinctly Mycenaean civilization, and continued unbroken for centuries after it. They thus strengthen us in the position which we have been led to take from a general survey of the whole result of our excavations.

A detailed catalogue of the Terra-cotta Figurines follows. Upon the PLATES (XLII.–XLVIII.) the figures in parentheses refer to the numbers of this catalogue.

I. PRIMITIVE ARGIVE.

1. (PLATE XLII. 1.) Rude standing figure, modeled by hand, — a simple strip of clay, pinched together at the middle to form a waist and a stumpy pair of arms (now broken), and pinched at top into a pointed head. No traces of color. Height, 5 cm. Dark red clay.

Cf. Schliemann, *Tiryns*, p. 150, No. 78.



FIG. 1.

2. (Fig. 1.) Similar figure, arms broken. To each side of the nose is fixed a lump of clay, to represent the eyes. The bottom is rounded to form a base. No trace of color. Height, 4.5 cm. Light yellow clay.

3. (Fig. 2.) Similar figure with a lump of clay attached to each side of the nose to represent the eyes, and another lump on top of head, to form a sort of pilos or cap. The figure is attached to a base and possibly formed part of a group. No traces of color. Height, 5 cm. Dark red clay.



FIG. 2.

Cf. Schliemann, *Tiryns*, p. 153, No. 82.



FIG. 3.



FIG. 4.

4. (Figs. 3 and 4.) Similar figure, with lumps for eyes and a strip of clay wound about the head, forming a stephane. Below this stephane, at back, three strips of clay are applied to represent the hair. The figure stands on a plinth and may have formed part of a group. The body is painted brown; the face is covered with a white slip. Height, 5.5 cm. Clay, reddish yellow.

5. (Fig. 5.) Similar figure, wearing stephane. The body is pierced by a round hole, apparently for the purpose of suspending the figure. No traces of color. Height, 6.5 cm. Red clay.



FIG. 5.

6. Fragments of two similar figures with holes for suspension.

7. (PLATE XLII. 6.) Primitive figure, right arm broken. Eyes, the usual lumps. The stephane has a boss added in front. Traces of white slip. Height, 6 cm. Clay, light yellow.

8. (Fig. 6.) Primitive figure, which originally had two lumps for eyes, now lost. The figure is remarkable for the two lumps of clay which are evidently meant for the breasts, although they are placed very low. Color, red, shading to black (apparently from burning). Height, 5.5 cm. Yellow clay.



FIG. 6.

9. (Fig. 7.) Similar figure, with the usual lumps for eyes. The mouth is rudely represented by a cutting across the "beak." The vertical grooves in the lower part of the figure seem to represent the folds of the chiton. No trace of color. Height, 5.5 cm. Light yellow clay.

10. (Fig. 8.) Standing male figure with stephane. The eyes are not indicated, but the lower part of the "beak" is drawn out to form a beard, and the mouth is represented by a short cutting. Body and stephane are painted red. Height, 5 cm. Yellow clay.



FIG. 7.



FIG. 8.

11. One hundred and eleven fragments of figures similar to Nos. 1–9, showing the same development of hair and stephane, but no development of drapery. They are all of small dimensions, made by hand, of rather coarse clay, and generally show traces of a white coat, with simple line patterns applied in red and black.

II. TIRYNTHIAN ARGIVE.

GROUP 1: SLIGHTLY DEVELOPED PLASTIC ORNAMENTATION (NO DECORATIVE BANDS).

12. (PLATE XLIII. 1.) Seated female figure, simplest form. The figure is made in the same way as No. 1, but it is slightly bent in the middle, and to the back is applied a four-legged support (cf. p. 5, note 1). There is a simple stephane on the head, and the feet are represented by two lumps applied to the bottom of the figure. White slip, traces of red on stephane. Height, 4.5 cm. Dark yellow clay.

13. Seventy-five fragments of figures similar to No. 12, exhibiting no adornment other than stephane and slight development of hair. They are usually covered with a white coat, and decorated with red and black lines.



FIG. 9.

14. Fragment of figure similar to No. 12, broken at waist, and at neck and left shoulder. Above the waist are two holes for inserted arms, with fragments of arms still in place. Traces of white. Height, 6.5 cm. Clay, reddish yellow.

15. (Fig. 9.) Bearded seated figure, broken at waist and lacking arms. Eyes, the usual lumps. Round pilos-like cap. Mouth, a deep cut, and beard marked by four vertical grooves. White slip. Height, 6.5 cm. Yellow clay.

16. (Fig. 10.) Seated male figure in high pilos, with strap passing under chin. The figure has a band across the mouth, plainly for holding a flute, which is now broken away. The *αἰδοῖα* are represented by a round lump of clay. Traces of white. Height, 8.5 cm. Red clay.



FIG. 11.

Cf. for headdress, Schliemann, *Tiryns*, p. 159, No. 93; Furtwängler, *Jahrbuch*, 1887, p. 202, No. 8; Furtwängler, *Olympia, Ergebnisse: Die Bronzen*, pl. xvii. 288.

17. (Fig. 11.) Seated figure with feet extended. Part of face, both arms, feet, and legs of chair missing. The figure has a stephane with boss, but otherwise is unadorned. A strip of clay over each temple forms the hair. White slip. Height, 8 cm. Length, 6.5 cm. Yellow clay.

Cf. Schliemann, *Tiryns*, p. 159, No. 91.



FIG. 10.

18. Two similar figures, badly broken.

19. Similar figure, with band over mouth, apparently for holding flute. Traces of white coat. Height, 5 cm. Length, 6 cm. Yellow clay.

[1] Cf. No. 276. [2] Cf. No. 280. Cf. No. 294. [3] Cf. No. 292.

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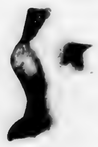


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15. (Fig. 9.) Bearded seated figure, broken at waist and lacking arms. Eyes, the usual lumps. Round pilos-like cap. Mouth, a deep cut, and beard marked by four vertical grooves. White slip. Height, 6.5 cm. Yellow clay.

16. (Fig. 10.) Seated male figure in high pilos, with strap passing under chin. The figure has a band across the mouth, plainly for holding a flute, which is now broken away. The *aidoîa* are represented by a round lump of clay. Traces of white. Height, 8.5 cm. Red clay.

Cf. for headdress, Schliemann, *Tiryns*, p. 159, No. 93: Furtwängler, *Jahrbuch*, 1887, p. 202, No. 8: Furtwängler, *Olympia, Ergebnisse: Die Bronzen*, pl. xvii. 288.



FIG. 11.

17. (Fig. 11.) Seated figure with feet extended. Part of face, both arms, feet, and legs of chair missing. The figure has a stephane with boss, but otherwise is unadorned. A strip of clay over each temple forms the hair. White slip. Height, 8 cm. Length, 6.5 cm. Yellow clay.

Cf. Schliemann, *Tiryns*, p. 159, No. 91.

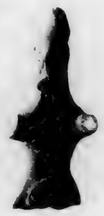


FIG. 10.

18. Two similar figures, badly broken.

19. Similar figure, with band over mouth, apparently for holding flute. Traces of white coat. Height, 5 cm. Length, 6 cm. Yellow clay.

20. Similar figure, broken at waist, legs of chair also broken. At left side, near feet, are traces of a smaller figure, also broken at waist. No traces of color. Height, 5 cm. Length, 6.5 cm. Yellow clay.



Fig. 12.

21. (Fig. 12.) Flute player of uncertain sex. Right arm and right half of flute broken away. With the exception of the face and the flutes, the figure is entirely covered with dark red paint. Height, 7 cm. Light yellow clay.



Fig. 13.

22. (Fig. 13.) Performer on the syrinx — the "bird-faced" type, with simple stephane. The nature of the Pan's pipe is clearly indicated by a cross strip at top and bottom of the instrument. Broken at bottom. Height, 4.5 cm. Red clay.

23. (Fig. 14.) Similar figure with double flute. Stephane adorned with a boss. Red stripe indicates the flute strap. Height, 5.5 cm. Red clay.

24. (Fig. 15.) Woman kneading bread. She wears a stephane, and has a lump of clay attached to each shoulder, to represent dress-pins (*περόναι*). Small disks of clay represent the dough in the pan. Traces of white on arms of woman and on pan, of red on stephane, of brown on woman's body. Height, 6 cm. Clay, reddish yellow.



Fig. 14.



Fig. 15.

Cf. Schliemann, *Tiryns*, p. 149, No. 76. The motive is very ancient — it occurs in the oldest sculpture of Egypt; cf. Perrot et Chipiez, *Hist. de l'Art*, I. p. 74, fig. 48, and p. 662, fig. 448.



Fig. 16.

25. (Plate XLII. 3.) Standing female figure, showing an attempt at more careful representation of the hair. Under the stephane there is a large curl over each eye, and an oblong strip of clay at the back of the head, now mostly broken away. Stephane, red; hair and body black. Height, 8 cm. Red clay.

Cf. Schliemann, *Tiryns*, pl. xxv. k.

26. (Fig. 16.) Flute player (flutes now missing), showing further development of hair into two strands in front of each shoulder, and four curls across forehead. There is also an attempt to represent the feet. Traces of white slip. Height, 8.5 cm. Clay, dark yellow.

GROUP 2: CONSIDERABLY DEVELOPED PLASTIC ORNAMENTATION (ONE BAND).

27. (Plate XLII. 4.) Standing figure, with close-fitting necklace (cf. p. 11) extending to nape of neck, and bosses at shoulders, to represent *περόναι*. The figure has a stephane. Traces of white. Height, 7.5 cm. Red clay.

28. (Plate XLII. 12.) Similar figure, with wide band stretched from shoulder to shoulder, surmounted by round bosses (cf. pp. 10 f.). The hair is represented by curls across the forehead, bound with a taenia. White slip, traces of red lines on band and down left side. Height, 11 cm. Light yellow clay.

29. Forty-three fragments of figures similar to Nos. 27 and 28, adorned with one necklace only. Almost all have the stephane, and show some development of the hair. They also have very considerable traces of white coat and ornamentation in red and black.

30. (Plate XLII. 2.) Standing figure, arms, head, and feet broken away, with narrow band which passes over left shoulder and under right arm. About the neck are traces of a close-fitting necklace. Slight traces of white. Height, 6 cm. Yellow clay.

Here the band seems clearly to represent the fold of an outer garment, arranged in the manner of the later himation (cf. the Acropolis statues, *Musées d'Athènes*, pls. ii. and iii.; Heuzey, *Fig. Ant.* pl. xii. 4; and our own Nos. 163, 164, and 175). The oblique band is very similar to that of the primitive vase in human form from Hissarlik, Schliemann, *Ilios*, p. 343, No. 235.

31. Two fragments of similar figures, with bands passing from left shoulder to right side.

32. (Fig. 17.) Standing figure without stephane. The hair is formed by curls arranged about a centre. The arms and all the upper part of the body were enveloped in a thin layer of clay, which formed a sort of shawl (now preserved only on right side). No traces of color. Height, 7 cm. Greenish yellow clay.



Fig. 17.

33. (Plate XLIII. 2.) Seated female figure with stephane, similar to No. 12, but decorated with a necklace from shoulder to shoulder. The eyes are not indicated plastically. The stephane has a boss. The feet are indicated by two projections. Covered with white slip, marked with red and black horizontal lines on chiton and chair. Height, 9 cm. Red clay.

Cf. Heuzey, *Fig. Ant.* pl. xl. 1 (from Cyrenaica).

34. (Plate XLIII. 3.) Similar figure, with ends of necklace enlarged into *περόναι*. The figure has no separate support, but is held upright by two legs attached directly to the back. Covered with white slip, traces of red lines at neck and waist. Height, 9.5 cm. Red clay.

Cf. Schliemann, *Tiryns*, p. 157, Nos. 87 and 88; and on the whole series of seated figures, the figures from Tegea (Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 541, 542; and Lenormant, *Gaz. Arch.* 1878, pp. 44 ff.).

35. Four hundred and ninety-one fragments of figures similar to Nos. 33 and 34, with stephane and single necklace, both with and without separately made chairs. They all show the same system of decoration in red and black lines on a white ground, with occasional use of color applied directly (for the bodies). Clay, usually red or yellow.

GROUP 3: ELABORATE PLASTIC ORNAMENTATION (TWO OR MORE BANDS).

36. (Plate XLII. 5.) Standing figure with two necklaces. The hair was formed by four notched strands at back of head, and shows traces of a stephane. Hair, eyes, and body painted black, face and breast natural color of the clay. Height, 6.5 cm. Dark yellow clay.

37. (Plate XLII. 11.) Similar figure with two necklaces and *περόναι* as *κουροτρόφος* (with an infant in her arms). The head of the child is broken away. White slip, traces of red on necklace, on infant, and on lower edge of chiton. Height, 7.5 cm. Red clay.

Cf. p. 13.

38. Six almost identical figures carrying infants, both with and without necklaces.



Fig. 18.

39. (Fig. 18.) Standing female figure, carrying a child on her back; he sits on her shoulders and grasps her around the head. She wears the customary stephane with boss. Hair, two strands over eyes. General traces of white. Height, 5.5 cm. Gray clay.

Cf. the figure given by Heuzey, *Fig. Ant.* pl. iv. 4, which has a child both at front and at back.

40. (Plate XLII. 10.) Standing female figure of usual type in stephane, with one double and (originally) two single bosses. She wears a close-fitting necklace with pendant, and long double necklace across shoulders, between two round pins. Plentiful traces of white slip, and of red lines on stephane and necklaces. Height, 8 cm. Dark yellow clay.

41. (Plate XLII. 13.) Similar figure, but without stephane. The hair was originally long curls, now broken away. She has three necklaces, consisting of a twisted band between two plain ones, and double bosses represent the dress-pins. The fold of the chiton between the legs seems to be represented by a slight indentation, but this might be due to a defect of the clay. The body is painted black. Height, 7.5 cm. Gray clay.

42. (Plate XLII. 7.) Similar figure in high stephane with three bosses. Hair, simple mass, crossed by horizontal grooves. Long necklace with three pendants across breast. Large round pin on left shoulder; the one on the right is broken away. The feet are carefully indicated by wedge-shaped projections, and the figure stands on a plinth. White slip, with traces of red on

20. Similar figure, broken at waist, legs of chair also broken. At left side, near feet, are traces of a smaller figure, also broken at waist. No traces of color. Height, 5 cm. Length, 6.5 cm. Yellow clay.



Fig. 12.

21. (Fig. 12.) Flute player of uncertain sex. Right arm and right half of flute broken away. With the exception of the face and the flutes, the figure is entirely covered with dark red paint. Height, 7 cm. Light yellow clay.



Fig. 13.

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Fig. 14.



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Cf. Schliemann, *Tiryns*, p. 149, No. 76. The motive is very ancient — it occurs in the oldest sculpture of Egypt; cf. Perrot et Chipiez, *Hist. de l'Art*, I. p. 74, fig. 48, and p. 662, fig. 448.



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Cf. Schliemann, *Tiryns*, pl. xxv. k.

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32. (Fig. 17.) Standing figure without stephane. The hair is formed by curls arranged about a centre. The arms and all the upper part of the body were enveloped in a thin layer of clay, which formed a sort of shawl (now preserved only on right side). No traces of color. Height, 7 cm. Greenish yellow clay.



Fig. 17.

33. (Plate XLIII. 2.) Seated female figure with stephane, similar to No. 12, but decorated with a necklace from shoulder to shoulder. The eyes are not indicated plastically. The stephane has a boss. The feet are indicated by two projections. Covered with white slip, marked with red and black horizontal lines on chiton and chair. Height, 9 cm. Red clay.

Cf. Heuzey, *Fig. Ant.* pl. xl. 1 (from Cyrenaica).

34. (Plate XLIII. 3.) Similar figure, with ends of necklace enlarged into *περόναι*. The figure has no separate support, but is held upright by two legs attached directly to the back. Covered with white slip, traces of red lines at neck and waist. Height, 9.5 cm. Red clay.

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37. (Plate XLII. 11.) Similar figure with two necklaces and *περόναι* as *κουροτρόφος* (with an infant in her arms). The head of the child is broken away. White slip, traces of red on necklace, on infant, and on lower edge of chiton. Height, 7.5 cm. Red clay.

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41. (Plate XLII. 13.) Similar figure, but without stephane. The hair was originally long curls, now broken away. She has three necklaces, consisting of a twisted band between two plain ones, and double bosses represent the dress-pins. The fold of the chiton between the legs seems to be represented by a slight indentation, but this might be due to a defect of the clay. The body is painted black. Height, 7.5 cm. Gray clay.

42. (Plate XLII. 7.) Similar figure in high stephane with three bosses. Hair, simple mass, crossed by horizontal grooves. Long necklace with three pendants across breast. Large round pin on left shoulder; the one on the right is broken away. The feet are carefully indicated by wedge-shaped projections, and the figure stands on a plinth. White slip, with traces of red on

necklace, pin, hair, and stephane; body, from waist down, black. Height, 10 cm. Dark yellow clay.

43. (Fig. 19.) Fragment of figure with two necklaces and peculiar form of pin on right shoulder; this consists of a wedge-shaped piece of clay, and is plainly only an elongated form of the round pin of earlier numbers; it forms a transition, however, to the elaborate pins of later numbers. Hair two large curls, surmounted by stephane. Traces of white. Height, 5 cm. Yellow clay.



Fig. 19.

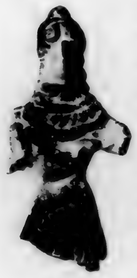


Fig. 20.

44. (Fig. 20.) Similar female figure, with elaborate applied ornaments. She has a stephane with double boss, bound about the bottom with a taenia. The hair is represented by four spiral curls over forehead, three long curls at back. Four necklaces (one twisted, one with pendant), and under them (appearing at left side) two more bands, which can hardly be anything but an attempt to represent the fold of the chiton. On the right shoulder is an elaborate pin, consisting of two cross-bars and two bosses, with traces of a third cross-bar (type of No. 84). The feet are marked with three grooves each. A wide band of clay, broken at both extremities, appears under right arm, and there are traces of a similar band under left arm. These may have served to form a loop for suspension, for the figure could never have been intended to stand. White slip, with red lines on face and breast; stephane, taenia, and body red; hair black, black band at waist and at bottom of chiton. Height, 9 cm. Clay, dark yellow.

45. (Plate XLII. 8.) Similar figure, with deep indentation in beak, which brings out nose and chin. The figure wears a simple stephane. Hair, two large curls over forehead, six notched strands at back. There are three necklaces (simple band between two notched bands), with flower-shaped περόνη on left shoulder. Face and necklaces show thick white slip; the body has horizontal red lines. Height, 13.5 cm. Clay, greenish yellow.

46. (Plate XLII. 9.) Similar figure with the same indentation for mouth. The hair consisted originally of thick twisted braids (two pieces only are preserved). Four necklaces — twisted band between two plain ones, topped by waved band. The fibulae were elaborate; each consisted originally of two large bosses of three concentric circles, with small bosses between. Thick white slip on face and necklaces, narrow red line at waist. Height, 11.5 cm. Clay, reddish yellow.

47. Thirty fragments of figures similar to Nos. 40–46, with two or more necklaces. They are all crudely made, often without trace of color, although all probably had at least the usual white coat with line decoration.

48. Fifteen fragments of bodies, broken below waist, so that it is impossible to determine scheme of decoration.

49. (Plate XLIII. 6.) Seated figure with stephane (broken at front) and two necklaces; also originally with pins at the shoulders. The hair is treated as a single mass over each eye. Customary white slip, some traces of red horizontal lines on neck (to represent another necklace?), necklace, waist, and lower part of chiton. Height, 12.5 cm. Clay, red.

50. (Plate XLIII. 7.) Similar figure with four necklaces (three plain bands and one twisted band), seated in wide chair. Hair is treated as one single, large curl on top of head. White slip. Height, 9.5 cm. Dark red clay.

Cf. Schliemann, *Tiryns*, p. 156, No. 86.

51. (Plate XLIII. 10.) Fragment of similar figure, broken at waist and right shoulder, with three necklaces (a plain band between two twisted bands), ending on each shoulder in two round bosses. The mouth is distinctly marked by a straight groove across beak. The figure has earrings consisting of one boss applied to another, and stephane. The hair is treated as a single strand over each eye, notched in front, as a mass at back, criss-crossed with vertical and horizontal grooves, and notched at sides of head. Traces of white. Height, 5.5 cm. Dark yellow clay.

52. (Fig. 21.) Upper part of female figure, with a remarkable brooch on right shoulder — a large spiral, adorned with rosettes and bosses. (In this single case, it seems possible that this ornament is of a floral nature, and has some connection with Hera Antheia; cf. p. 10.) Hair, a large mass, which covers head and shoulders, hatched with horizontal and vertical grooves. The earrings have the form of rosettes, with raised bosses in the centre. Traces of white. Height, 5 cm. Red clay.



Fig. 21.

53. (Plate XLIII. 8.) Similar figure, elaborate decoration. It has six necklaces, four plain and two twisted bands; the lower one passes around the back. Earrings in the forms of double bosses. The stephane also has a large boss. The hair is treated as a long notched curl over each eye, with five spirals at back of head. Traces of white, with red on stephane. Height, 7 cm. Reddish yellow clay.

54. (Plate XLIII. 9.) Elaborate figure, broken at waist; left arm and right forearm missing. The figure has no necklaces, but a deep groove runs across the breast and around the shoulders and back, to mark the edge of the chiton. The stephane is pierced by three holes, probably intended for inserted ornaments. Earrings in the form of rosettes. The hair consists of two bands above forehead, filled with irregular lines of small holes, — a not altogether unsuccessful attempt to indicate the texture of the hair. Below these bands the hair falls in spiral curls (originally there were two which fell in front of shoulders, and four at back), which remind one strongly of metal work. The treatment of the body at the waist marks a style which is not constructively that of terra-cotta figures, but is more like the technique of beaten metal. On the shoulders are fibulae in the form of four-leaved clovers (cf. p. 10). Some traces of red on chiton and on stephane. Height, 8.5 cm. Gray clay, now black from burning.

55. Five hundred and seventy-seven more or less broken seated figures of the type of Nos. 49–53, with two or more necklaces, usually with stephane and pins. Some traces of decoration in red and black lines on a white ground, with occasional application of paint directly to the clay.



Fig. 22.

56. (Fig. 22.) Upper part of "bird-faced" figure, broken at waist. Hair, single wavy curl above forehead. The figure is entirely wrapped in a sort of shawl, which rises to a point over the head. Thick white slip; traces of red and black on fragment of back of chair. Height, 6.5 cm. Yellow clay.

Cf. No. 32 and the figure from Tegea, Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 554–558.

57. (Plate XLIII. 4.) Seated female figure, holding infant (heads of both figures missing). The seated figure is of the regular Tiryntian type, with a necklace from shoulder to shoulder. The child is an oblong lump of clay, with a groove at bottom to mark the feet. Some traces of white. Height, 6 cm. Red clay.

Cf. p. 13.

58. Fragments of seven similar figures, all of the regular "bird-faced" type, to which a lump of clay is added to represent a child. Some traces of white. Clay, red to yellow.

59. (Plate XLIII. 11.) Fragment of female figure, broken at neck and waist, on wide seat, which was evidently intended for two figures. The fragment preserved wears a waved necklace of two bands, and was doubtless of the "bird-faced" type. In her lap she holds an object like a broad roll or band, marked with five grooves, which evidently extended to the other figure of the group. Slight traces of white, with red on taenia and black on the body of the woman. Height, 6.5 cm. Length, 8.5 cm. Reddish yellow clay.

60. (Plate XLIII. 5.) Female figure from a similar group (the seat is here broken close to the figure, but was plainly intended for two figures, as it shows no traces of legs at the point of breakage. The face is of the usual "Tirynthian Argive" sort, with a single mass of hair over each eye. The entire figure is wrapped in a mantle (cf. No. 56) meeting in front, which rises to a point above the head. In the lap are traces of a roll or band, similar to that of No. 59. Traces of brown on hair and lower part of chiton. Height, 8.5 cm. Reddish yellow clay.

necklace, pin, hair, and stephane; body, from waist down, black. Height, 10 cm. Dark yellow clay.

43. (Fig. 19.) Fragment of figure with two necklaces and peculiar form of pin on right shoulder; this consists of a wedge-shaped piece of clay, and is plainly only an elongated form of the round pin of earlier numbers; it forms a transition, however, to the elaborate pins of later numbers. Hair two large curls, surmounted by stephane. Traces of white. Height, 5 cm. Yellow clay.



Fig. 19.

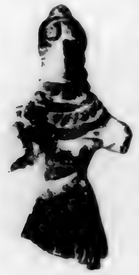


Fig. 20.

44. (Fig. 20.) Similar female figure, with elaborate applied ornaments. She has a stephane with double boss, bound about the bottom with a taenia. The hair is represented by four spiral curls over forehead, three long curls at back. Four necklaces (one twisted, one with pendant), and under them (appearing at left side) two more bands, which can hardly be anything but an attempt to represent the fold of the chiton. On the right shoulder is an elaborate pin, consisting of two cross-bars and two bosses, with traces of a third cross-bar (type of No. 84). The feet are marked with three grooves each. A wide band of clay, broken at both extremities, appears under right arm, and there are traces of a similar band under left arm. These may have served to form a loop for suspension, for the figure could never have been intended to stand. White slip, with red lines on face and breast; stephane, taenia, and body red; hair black, black band at waist and at bottom of chiton. Height, 9 cm. Clay, dark yellow.

45. (Plate XLII. 8.) Similar figure, with deep indentation in beak, which brings out nose and chin. The figure wears a simple stephane. Hair, two large curls over forehead, six notched strands at back. There are three necklaces (simple band between two notched bands), with flower-shaped περόνη on left shoulder. Face and necklaces show thick white slip; the body has horizontal red lines. Height, 13.5 cm. Clay, greenish yellow.

46. (Plate XLII. 9.) Similar figure with the same indentation for mouth. The hair consisted originally of thick twisted braids (two pieces only are preserved). Four necklaces — twisted band between two plain ones, topped by waved band. The fibulae were elaborate: each consisted originally of two large bosses of three concentric circles, with small bosses between. Thick white slip on face and necklaces, narrow red line at waist. Height, 11.5 cm. Clay, reddish yellow.

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Fig. 21.

53. (Plate XLIII. 8.) Similar figure, elaborate decoration. It has six necklaces, four plain and two twisted bands; the lower one passes around the back. Earrings in the forms of double bosses. The stephane also has a large boss. The hair is treated as a long notched curl over each eye, with five spirals at back of head. Traces of white, with red on stephane. Height, 7 cm. Reddish yellow clay.

54. (Plate XLIII. 9.) Elaborate figure, broken at waist; left arm and right forearm missing. The figure has no necklaces, but a deep groove runs across the breast and around the shoulders and back, to mark the edge of the chiton. The stephane is pierced by three holes, probably intended for inserted ornaments. Earrings in the form of rosettes. The hair consists of two bands above forehead, filled with irregular lines of small holes, — a not altogether unsuccessful attempt to indicate the texture of the hair. Below these bands the hair falls in spiral curls (originally there were two which fell in front of shoulders, and four at back), which remind one strongly of metal work. The treatment of the body at the waist marks a style which is not constructively that of terra-cotta figures, but is more like the technique of beaten metal. On the shoulders are fibulae in the form of four-leaved clovers (cf. p. 10). Some traces of red on chiton and on stephane. Height, 8.5 cm. Gray clay, now black from burning.

55. Five hundred and seventy-seven more or less broken seated figures of the type of Nos. 49–53, with two or more necklaces, usually with stephane and pins. Some traces of decoration in red and black lines on a white ground, with occasional application of paint directly to the clay.



Fig. 22.

56. (Fig. 22.) Upper part of "bird-faced" figure, broken at waist. Hair, single wavy curl above forehead. The figure is entirely wrapped in a sort of shawl, which rises to a point over the head. Thick white slip; traces of red and black on fragment of back of chair. Height, 6.5 cm. Yellow clay.

Cf. No. 32 and the figure from Tegea, Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 554–558.

57. (Plate XLIII. 4.) Seated female figure, holding infant (heads of both figures missing). The seated figure is of the regular Tirynthian type, with a necklace from shoulder to shoulder. The child is an oblong lump of clay, with a groove at bottom to mark the feet. Some traces of white. Height, 6 cm. Red clay.

Cf. p. 13.

58. Fragments of seven similar figures, all of the regular "bird-faced" type, to which a lump of clay is added to represent a child. Some traces of white. Clay, red to yellow.

59. (Plate XLIII. 11.) Fragment of female figure, broken at neck and waist, on wide seat, which was evidently intended for two figures. The fragment preserved wears a waved necklace of two bands, and was doubtless of the "bird-faced" type. In her lap she holds an object like a broad roll or band, marked with five grooves, which evidently extended to the other figure of the group. Slight traces of white, with red on taenia and black on the body of the woman. Height, 6.5 cm. Length, 8.5 cm. Reddish yellow clay.

60. (Plate XLIII. 5.) Female figure from a similar group (the seat is here broken close to the figure, but was plainly intended for two figures, as it shows no traces of legs at the point of breakage. The face is of the usual "Tirynthian Argive" sort, with a single mass of hair over each eye. The entire figure is wrapped in a mantle (cf. No. 56) meeting in front, which rises to a point above the head. In the lap are traces of a roll or band, similar to that of No. 59. Traces of brown on hair and lower part of chiton. Height, 8.5 cm. Reddish yellow clay.

61. (Fig. 23.) Similar female figure from right hand side of group. The mantle is here broken at the back, while in front it leaves the neck and shoulders bare. The figure has a simple stephane and a single necklace, adorned with three bosses. White slip, traces of red on necklace. Height, 6 cm. Clay, reddish yellow.



Fig. 23.

62. Fragment of a similar group of large size (only left hand figure preserved, broken at shoulder and at lower right hand corner). In the lap is a fragment of a broad band, similar to the bands of Nos. 59 and 60. General traces of white. Height, 11 cm. Red clay.

The interpretation of these groups is an interesting problem. So far as we can judge, both the figures were feminine, for in Nos. 59, 60, and 62 we have the left hand figure of the group, and in No. 61 the right hand figure, and these are all feminine. Moreover, the traces of the second figure, preserved on the seat of No. 59, point to a female rather than to a male figure. This fact at once declares against the theory that we are here dealing with a representation of Zeus and Hera, a sort of ἱερὸς γάμος (such as the group given by Overbeck, *Kunstmythologie*, Hera, fig. 4 a, from Gerhard, *Ant. Bildwerke*, pl. i.), which we should most naturally expect to find at a sanctuary of Hera.[1] The association of Hebe with Hera, as she was later associated with her in the group of Polycleitos and Naukydes, seems hardly probable at the early date to which we must assign these groups. We are reduced, then, to the view that we have here an early form of two female divinities like the later Demeter and Koré. (For another very primitive group of these goddesses, cf. Heuzey, *Fig. Ant.* pl. xiii. 3; later examples are pls. xviii. bis. 3; xxiv. 1. Cf. the same author's article, 'Groupe de Déméter et Koré,' in *Mon. grecs pub. par l'Assoc. pour l'encouragement des études grecques en France*, 1876.) The roll may then be the symbol of the bond between the two goddesses.

63. Four hundred and thirteen fragments of bodies of the early seated type — lower parts only preserved. They usually show some traces of the white coat, and often are decorated at the lower edge and at the waist with simple line patterns in applied red and black.

64. Two hundred and fifty-nine detached heads of the "bird-faced" type, with round lumps for eyes, and (usually) simple stephane. Traces of the white coat are common, and the stephane is often red.

III. MYCENAEAN.

65. (Fig. 24.) Fragment of female idol of the usual Mycenaean form — round body — broken at waist and neck. Ornamentation in wavy lines, brown to black. Height, 4.5 cm. Fine yellow clay.



Fig. 24.



Fig. 25.

Cf. Schliemann, *Mycenae and Tiryns*, pl. C, fig. m.

66. Nine fragments of similar figures, same clay, same ornamentation.

67. (Fig. 25.) Female figure with arms raised (pelta-shaped body.) Ornamentation in red lines. Height, 8 cm. Fine yellow clay.



Fig. 26.

Cf. Schliemann, *Mycenae and Tiryns*, pl. B, figs. e and f.

68. Thirteen fragments of similar figures, same clay, ornamentation in red, changing to brown and black.

69. (Fig. 26.) Female idol with arms (two applied strips of clay) crossed below breasts, which are also represented plastically, by applied disks. Broken at top and bottom. Ornamentation in red lines. Height, 5.5 cm. Fine yellow clay.

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[1] The Heraea mentioned by Paus. (II. 24. 2) probably had some relation to the ἱερὸς γάμος (cf. Daremberg et Saglio, *Dict. des Ant.* 'Hiéros gamos,' p. 179). On the whole subject, cf. *ibid.* pp. 177–181; Roscher, *Lex. der Myth.* I² p. 2098; Förster, *Die Hochzeit des Zeus u. der Hera*, Breslau, 1867.

70. (Fig. 27.) Body of Mycenaean figure with arms raised, broken at top and bottom. The breasts are connected by a crescent-shaped band (meant to represent a necklace? cf. No. 36, and the Tirynthian Argive figures generally). Usual wavy lines, shading from light to dark brown. Height, 3.5 cm. Reddish yellow clay.



Fig. 27.

71. Twenty-six fragments of Mycenaean ware, so broken that the exact form cannot be determined; same fine clay, with ornamentation in wavy lines.

72. (Fig. 28.) Large bull's or cow's head, broken at neck and minus horns. Ornamentation in light red, straight lines on forehead and nose, circle around eyes and end of nose, hatched lines on horns, filling of double squares on cheeks, and peculiar ornament at back of neck (Fig. 28 *b*). In the middle of the forehead is a vertical hole, possibly meant to contain a bronze axe or some other ornament (cf. Schliemann, *Mycenae*, p. 218, figs. 329, 330; and the large silver head, *ibid.* p. 216 f., figs. 327, 328). The theory of Perrot (*Histoire de l'Art*, VI. p. 822), that this axe symbolized the axe used to slaughter the victim, seems to us probable. Height, 8 cm. Width, 10.5 cm. Fine yellow clay.

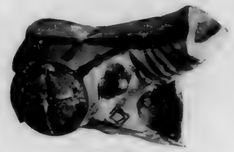


Fig. 28.



Fig. 28 *b*.

73. (Fig. 29.) Body of horse, broken at legs and neck. Line ornamentation in brown, shading to black. Length, 7.5 cm. Fine yellow clay.

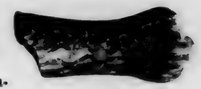


Fig. 29.

74. Nine fragments of other animals, much broken, same clay, same ornamentation.

IV. GEOMETRIC.

75. (Fig. 30.) Rude round-bodied figure, overladen with ornamentation. It presents many analogies to the elaborate Tirynthian Argive figures. The nose was originally of the "beak" type. The eyes are incised triangles. Ear very large, with large pendant. The hair was a large mass, now broken away. A single band passes from the neck *under* each arm, and there are two simple necklaces, which carry a large brooch, broken at lower edge. On the shoulders are "clover-leaf" pins, with five bosses each. The decoration in color is Geometric (Dipylon), in red paint, shading to black. It consists of horizontal lines, zigzags, and dots below waist, of dots alone on necklace, pins, and brooch. Height, 12.5 cm. Reddish yellow clay.



Fig. 30.

Cf. pp. 6 f.

76. (Plate XLVIII. 13.) Geometric horse, legs broken. The decoration is entirely in straight lines, except at shoulder, where there are two curved lines. This horse is very similar to the horses which are so common upon the covers of Geometric vases (cf. Rayet et Collignon, *Histoire de la Céramique Grecque*, p. 33, fig. 21), and perhaps came from a vase. Color, lustrous black. Height, 9 cm. Yellow clay.

Among the other animals of Class IX. several show traces of Geometric influence in their decoration, but in none are these traces so pronounced as to justify their transference to the Geometric class.

Cf. p. 6.

61. (Fig. 23.) Similar female figure from right hand side of group. The mantle is here broken at the back, while in front it leaves the neck and shoulders bare. The figure has a simple stephane and a single necklace, adorned with three bosses. White slip, traces of red on necklace. Height, 6 cm. Clay, reddish yellow.



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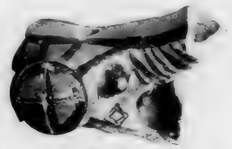


Fig. 28.



Fig. 28 *b*.

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Fig. 30.

Cf. pp. 6 f.

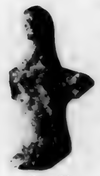
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V. ADVANCED ARGIVE.

77. (Fig. 31.) Seated female figure, varying from primitive type only in that the head has eyes, nose, and mouth carefully modeled. The face is of pronounced archaic type — mouth turned up at corners, eyes wide and staring. The body is still a mere oblong piece of clay; it shows traces of two necklaces. General traces of white. Height, 7.5 cm. Clay, red.


Fig. 31.

Cf. Schliemann, *Tiryns*, p. 160, No. 95.

78. (Fig. 32.) Similar figure, broken at waist, and lacking right arm. Face of marked archaic type — eyes, protruding masses. Hair, single long curl over each shoulder, topped by stephane with (originally) seven small bosses. The breasts were modeled separately and applied, as is evident from depression to receive right breast. In the hand, the thumb and the fingers are distinguished, and a hole is left between them (for holding an object?). Traces of white, of red on stephane. Height, 8 cm. Red clay.


Fig. 32.

79. (Plate XLIV. 2.) Seated figure, which shows some attempt at modeling the body. The swell of the breast is quite well reproduced, the hair is moulded with the face, the ear is fairly well given, although placed too high. The stephane has long ends behind, and thus forms a sort of taenia. The dress-pins are of the usual "boss" type. The band is here plainly a necklace, for the fold of the chiton is reproduced at the neck. There is no chair, but only two legs attached to the back of the figure. Color, white, with red on necklace, at waist, and on lower edge of chiton. Height, 12 cm. Light yellow clay.

80. (Plate XLIV. 1.) Flat-bodied figure (head missing), seated in elaborate chair. She wears three necklaces — the second has three pendants, and the third ends in small round pins. On the back and arms of the chair are round bosses. Ground color, white; the shorter necklaces are red; the long one has oblique lines; back of chair, vertical lines; arms of chair, horizontal lines; bosses, radiating lines; broad band at waist and below knees — all red. Height, 8 cm. Yellow clay.

Cf. Martha, *Cat. des Fig. du Mus. d'Athènes*, No. 731; and the statuette from Thisbe, now in Dresden, *Arch. Anz.* 1895, p. 220, 4.

81. (Fig. 33.) Fragment of seated figure, broken at neck and below waist. Simple necklace with pendant, followed by twisted necklace, and wide band, which is probably here the fold of the chiton. The fragment on the right shoulder is part of a large fibula. The figure is interesting as showing the method of attaching the head in these advanced Argive figures: the body was drawn out into a wedge-shaped projection at the top, upon which the head was fitted; the joint was then covered by a necklace in front and by the mass of the hair behind. This figure also shows the legs of chair attached directly to the figure. General traces of white; slight traces of red on ornaments. Height, 12 cm. Clay, red.

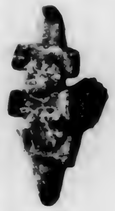

Fig. 33.

82. (Fig. 34.) Fragment of right shoulder, with fibula of the usual bronze type (cf. p. 10). The figure has two twisted necklaces, and the fold of the chiton is distinctly marked by an applied band of clay; to this is affixed the fibula in form of a semicircle, with two pairs of rings for decoration. Slight traces of white, and of red on fold. Height, 4 cm. Reddish yellow clay.


Fig. 34.

83. (Fig. 35.) Body of figure, which shows greatest development of fibula. This here consists of a long bar, decorated with rosettes, and with cross-bars of dumb-bell shape. Four bars and three rosettes are preserved, and this is probably the original number, as the piu begins to narrow considerably at the points of breakage. The ends undoubtedly curved forward, as in No. 84. The figure has two necklaces (one twisted) and distinctly marked fold. Traces of white on neck, necklaces, fibula, and back, of red on fold and on cross-bars of fibula. Height, 12.5 cm. Clay, red.


Fig. 35.


Fig. 36.

84. (Fig. 36.) Fibula of most elaborate type, broken from its figure. It has three cross-bars and two rosettes, and curves forward at the ends. Ground color white, cross-bars marked with red and black criss-cross lines, rosettes with radiating red and black lines; lower tip red. Height, 7 cm. Clay, yellow.

Cf. pp. 11, 242.

85. (Fig. 37.) Head and left arm of seated, flat-bodied figure, with an infant on her arm (only legs and feet of infant preserved). Of the hair, only a single mass, with horizontal grooves, is preserved over the left temple. The figure wears a necklace with three pendants. General traces of white, red lines below necklace, red band at infant's knees. Height, 8 cm. Red clay.


Fig. 37.

Cf. p. 13.

86. (Plate XLIV. 3.) Large seated female figure, broken at neck and at left lower edge. She held an infant in her arms, of which traces are preserved only in her lap. Elaborate adornment with double necklace, which carries two pendants at the sides, double waved band, double straight band, and wide fold. The pins, strangely enough, are only small disks, as in the earlier types. Left arm disproportionately short. The chair was made separately. Traces of white, with applied red on upper body and child. Lower body is painted brown with red horizontal lines. Height, 18 cm. Yellow clay.

87. (Fig. 38.) Similar *κουροτρόφος* figure with large infant on left arm. The infant's head is missing. Both woman and child are entirely enveloped in a thin layer of clay, which includes the back of the chair as well (cf. Nos. 56 and 60); but a break on the right side shows that the figures were complete before the application of this layer. The woman has a necklace with pendant, which was entirely hidden. The child wears the chiton, with small, round pins at the shoulders. The woman's face is round, with protruding eyes. The hair is treated in notched strands. Traces of white, of red on shawl. Height, 7.5 cm. Yellow clay.

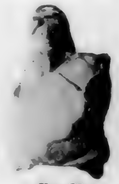

Fig. 38.


Fig. 39.

88. (Fig. 39.) Bust of very large seated figure, with three necklaces

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84. (Fig. 36.) Fibula of most elaborate type, broken from its figure. It has three cross-bars and two rosettes, and curves forward at the ends. Ground color white, cross-bars marked with red and black criss-cross lines, rosettes with radiating red and black lines; lower tip red. Height, 7 cm. Clay, yellow.

Cf. pp. 11, 242.

85. (Fig. 37.) Head and left arm of seated, flat-bodied figure, with an infant on her arm (only legs and feet of infant preserved). Of the hair, only a single mass, with horizontal grooves, is preserved over the left temple. The figure wears a necklace with three pendants. General traces of white, red lines below necklace, red band at infant's knees. Height, 8 cm. Red clay.


Fig. 37.

Cf. p. 13.

86. (Plate XLIV. 3.) Large seated female figure, broken at neck and at left lower edge. She held an infant in her arms, of which traces are preserved only in her lap. Elaborate adornment with double necklace, which carries two pendants at the sides, double waved band, double straight band, and wide fold. The pins, strangely enough, are only small disks, as in the earlier types. Left arm disproportionately short. The chair was made separately. Traces of white, with applied red on upper body and child. Lower body is painted brown with red horizontal lines. Height, 18 cm. Yellow clay.

87. (Fig. 38.) Similar *κουροτρόφος* figure with large infant on left arm. The infant's head is missing. Both woman and child are entirely enveloped in a thin layer of clay, which includes the back of the chair as well (cf. Nos. 56 and 60); but a break on the right side shows that the figures were complete before the application of this layer. The woman has a necklace with pendant, which was entirely hidden. The child wears the chiton, with small, round pins at the shoulders. The woman's face is round, with protruding eyes. The hair is treated in notched strands. Traces of white, of red on shawl. Height, 7.5 cm. Yellow clay.

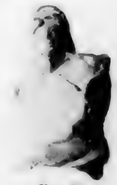

Fig. 38.


Fig. 39.

88. (Fig. 39.) Bust of very large seated figure, with three necklaces

(plain necklace between two twisted ones), double waved band and wide fold. On the back are traces of hair treated as a mass, and of back of chair. General traces of white, with red on fold. Height, 12 cm. The entire figure must have been fully 40 cm. tall. Red clay.

89. (Fig. 40.) Similar large fragment, with three necklaces and wide fold, topped by two narrow bands with round pendants. Traces of white, fold red. Height, 10 cm. Yellow clay.



Fig. 40.

90. (Plate XLIV. 4.) Torso of seated figure with very elaborate adornment. About the neck runs a simple necklace decorated with a line of holes, followed by a twisted chain with large pendants, which are decorated alternately with grooves and rows of holes. The chiton is a distinct layer of clay. From shoulder to shoulder, over the chiton, runs a waved band, adorned with fine holes; between the turns of this band are rosettes (an imitation of lace? or should we find here a trace of the metal ornaments found by Schliemann, which were intended to be sewn to the garment? cf. p. 11). The pins are of the "clover-leaf" type, with double bosses in the centre, and single bosses on the leaves. At the back are traces of curls, and two notched bands are stretched from shoulder to shoulder over the chiton. General traces of white on neck and necklaces, body brown. Height, 8 cm. Clay, light yellow.

91. (Plate XLIV. 5.) Similar elaborate torso. The chiton is a separate layer of clay. Two twisted necklaces. Over the chiton in front is stretched a waved stripe, decorated with incuse disks (such as are found in ceramic ware) followed by a line of pendants, with similar incuse disks, bosses at top and notches at bottom (cf. p. 11). The pin is similar to that of No. 90, but larger. Behind, there are traces of curls and a line of pendants from shoulder to shoulder. Traces of brown paint on chiton. Height, 8 cm. Clay, yellow.

92. One hundred and eighty fragments of figures similar to Nos. 77–91. The plastic decoration is throughout very elaborate; the painted decoration consists sometimes of red and black lines on a white ground. Sometimes this treatment is applied only to the upper part of the body, and the lower part is given a solid brown color, applied directly to the clay.

93. (Plate XLV. 11.) Head and shoulder of advanced Argive type. The headdress is broken away. The hair was a row of curls over the forehead, topped by a notched mass, with the usual simple mass at the back, now broken away. The figure has two close-fitting necklaces with three pendants, followed by three larger ones (one of them twisted), decorated at the shoulder with a pin of the round boss type. The fold of the chiton is represented by two narrow bands; it was held by a large fibula of the usual elaborate kind, of which only the upper part remains. White slip, red on ornaments. Height, 12 cm. Yellow clay.

94. (Plate XLV. 13.) Similar head and shoulder, color well preserved. Close-fitting necklace with pendant, followed by three others (simple band between two twisted bands) and double waved band. The pin is placed altogether too high, so that it can only be intended for ornament, — possibly as a pendant to the necklace. Disk earrings with pendants. Hair, two masses above forehead, with horizontal grooves, large mass at back, notched at sides of neck, The headdress consists of a calathus, bound by a wide taenia. The ground color is white; black is found on hair (except at sides of neck), above the eyebrows, and inside of eyes; in radiating lines on earrings, in dots on pin and waved band; red appears in radiating lines on earrings, in dots on pin and waved band, and in two wide streaks above and below close-fitting necklace. All the colors are carelessly applied, and seem to be meant simply to enliven the figure, without much regard to its anatomy. Height, 12 cm. Clay, yellow.

95. (Plate XLV. 2.) Head of advanced Argive type, with double stephane. The hair consists of four loops over forehead, single long curl at each side. Ground color, white; traces of red on hair. Height, 5.5 cm. Gray clay.

96. (Plate XLV. 4.) Similar head, with stephane and boss. Hair, two notched strands over forehead, topped by two masses with horizontal grooves; single strand over shoulder. Simple disk earrings. Traces of white. Height, 5.5 cm. Yellow clay.

97. (Plate XLV. 8.) Similar head; has stephane with double boss, bound by a taenia. Hair, two notched strands over forehead, and mass at back. Double boss earrings. Traces of two necklaces. Ground color, white; stephane, red; hair, brown. Height, 6 cm. Yellow clay.

98. (Plate XLV. 9.) Head of advanced Argive type, in high calathus with three bosses and double taenia. Hair, two masses over forehead, wedge-shaped mass at back. One earring is preserved — a simple disk. Traces of one plastic necklace, with pendant and boss, and of two painted necklaces, red. Ground color, white; hair, black; red stripes on calathus, necklace, and neck. Height, 9 cm. Yellow clay.

99. (Plate XLV. 5.) Similar head. The calathus has three bosses and is bound by double taenia. Hair, two notched strands, topped by two masses over forehead, large mass at back. Plain disk earrings. White slip; taenia, red; hair, black. Height, 7 cm. Clay, yellow.

100. (Plate XLV. 7.) Head of advanced Argive type with high calathus, fronted by two plumes (cf. p. 13) with a disk at the base. Hair, notched mass over forehead, topped by wide strands, which extend to shoulders. Earrings, large disks. A wide band represents the fold of the chiton. White coat; traces of red on brows, earrings, side hair, and fold. Height, 8.5 cm. Dark yellow clay.

101. (Plate XLV. 10.) Similar head, plumes broken away. Double taenia. Hair, two notched masses over forehead, topped by large curls, mass at back. Plain round earrings. Traces of necklace. White slip; hair, black; red on taenia. Height, 9.5 cm. Red clay.

102. (Plate XLV. 1.) Similar head, calathus small, plumes large. Double taenia. Hair, two large curls over forehead, mass at back. Rosette earrings. General traces of white. Height, 7.5 cm. Clay, gray.

103. (Plate XLV. 6.) Similar head. The plumes are here connected behind the calathus, and the one that is preserved is adorned with a disk. Double taenia. Round earrings. Hair, large curl over each temple, mass at back. Traces of necklace with pendants. Slight traces of white. Height, 11 cm. Clay, dark yellow, shading to red.

104. (Plate XLV. 12.) Similar head, with large rosette between plumes, which here, also, are connected behind calathus. Double taenia. Rosette earrings. Hair, mass over forehead and at back, topped by two large curls. Slight traces of necklace with pendant. White slip; hair black; red on necklace. Height, 9 cm. Dark yellow clay.

105. (Plate XLV. 3.) Head of advanced Argive type. The features are very sharp and distinctly archaic, — indeed, it may be a question whether this head ought not to be placed in the "Archaic" class. The eyes are wide and staring, mouth accentuated, in that the region separating the mouth from the cheeks and the chin is here defined by a round hollowing, which at the same time gives hardness. Hair, tight curls over forehead, treated in a conventional manner, like inverted wave pattern, spirals at back, now broken. Simple band about hair, traces of another ornament (perhaps calathus) on crown of head. Simple earrings. Traces of white on face; hair, black. Height, 4 cm. Clay, yellow.



Fig. 41.

106. Two hundred archaic heads, similar to Nos. 93–105, always showing the same tendency to elaborate headdresses.

Here, too, we have placed (see p. 7) —

107. (Fig. 41.) Body of standing female figure, broken at neck. The body is a perfect cylinder; in fact, it seems to have been made on the wheel. The hair was a simple mass at back, red. The ornamentation consists of a broad stripe at waist, and four series of three fine red lines below waist — very similar to Argive-Linear work (see p. 3) in vases. Height, 8.5 cm. Reddish yellow clay.

Cf. for round body, Heuzey, *Fig. Ant.* pl. ix. No. 3 (from Cyprus).

(plain necklace between two twisted ones), double waved band and wide fold. On the back are traces of hair treated as a mass, and of back of chair. General traces of white, with red on fold. Height, 12 cm. The entire figure must have been fully 40 cm. tall. Red clay.

89. (Fig. 40.) Similar large fragment, with three necklaces and wide fold, topped by two narrow bands with round pendants. Traces of white, fold red. Height, 10 cm. Yellow clay.

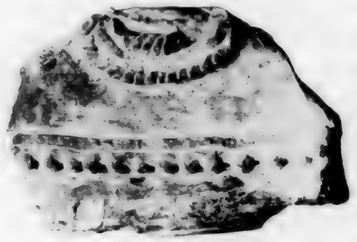


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Cf. for round body, Heuzey, *Fig. Ant.* pl. ix. No. 3 (from Cyprus).

VI. FIGURES UNDER ORIENTAL INFLUENCE.

108. (Fig. 42.) Plaque with heraldic lions, broken at right lower corner. The position of the lions is very schematic; each rests one fore paw on a pedestal, and raises the other horizontally, so that the two raised legs meet for their whole length. The tail is curved over the back. The heads turn and look backward. The surface is treated rather superficially, and the muscles are but little developed. No trace of color. Height, 10 cm. Clay, red, in many places burned black.


Fig. 42.

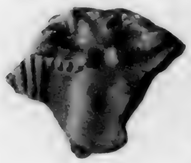
The Lion gate at Mycenae is strikingly similar to this plaque, as well as some Mycenaean gems (for instance, the one published by Tsountas, Ἐφ. Ἀρχ. 1888, p. 175, 2; pl. x. 2). Between the two lions of our plaque probably stood a pedestal or altar (the upper edge can still be made out) similar to those of the gate and the gem. The plaque would seem to belong to the end of the Mycenaean civilization. On the whole subject of heraldic animals, see Curtius, 'Über Wappengebrauch u. Wappenstil im gr. Alterthum,' in his *Gesammelte Abhandlungen*, II. pp. 77–115, pl. i. (cf. with our plaque especially Nos. 8 and 11).

109. (Fig. 43.) Upper part of winged female figure, broken at waist. The face is badly worn, but plainly archaic. Three notched strands of hair fall to each shoulder. The head is surmounted by a stephane. Arms akimbo, — the hands held sickle-shaped objects, badly worn. Hair, red; red bands on stephane, body, and wings. Height, 7 cm. Yellow clay.


Fig. 43.

This figure is very similar to the Delos statue (*B. C. H.* III. [1879], pp. 393–399, pls. vi. and vii.), and, like it, was undoubtedly a running figure with one knee touching the ground. In terra-cotta, we have similar figures in Martha, *Cat. des Fig. du Mus. d'Athènes*, No. 9, and in Dumont et Chaplain, *Les Céramiques de la Grèce Propre*, II. p. 229, No. 46. These are both explained as gorgons, and that is the interpretation we are inclined to give to our figure. On the subject of running figures, cf. Curtius, 'Die knieenden Figuren d. altgr. Kunst,' in *Gesammelte Abhandlungen*, II. pp. 116 ff. pl. ii., and Gerhardt, 'Über die Flügelgestalten der alten Kunst,' in his *Gesammelte Akad. Abhandlungen*, I. pp. 157 ff. pls. ix.–xii.

110. (Fig. 44.) Fragment of a similar figure, running to right, badly broken. All that appears is the body, with arms akimbo, a small part of right wing, right leg to knee, and left leg to middle of thigh. But the figure is plainly an archaic running figure. Traces of white; some red on chiton. Height, 5.5 cm. Reddish yellow clay.


Fig. 44.

Cf. No. 109.

111. (Fig. 45.) Squatting male figure, type of the Egyptian Bes, broken at knees. The figure is that of a dwarf with hands placed on the abdomen, which is abnormally developed. Hair, a mass with horizontal grooves. No trace of color. Height, 6 cm. Red clay.


Fig. 45.

The wide distribution of this class of figures may be seen from Orsi's note on the find at Megara Hyblaea, *Mon. Ant.* I. p. 838, note 1. Cf. the figure there given, pl. vi. 4. The development of this type is traced by Heuzey, 'Sur quelques représentations du dieu grotesque appelé Bès par les Égyptiens,' *Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres*, 1879, p. 140.

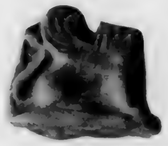
112. Six replicas of No. 111, all more or less broken. Same clay, some traces of white coat.

113. Similar figure of smaller size, feet broken away. No trace of color. Height, 5 cm. Dark yellow clay.

114. (Plate XLVIII. 16.) Fragment of large sphinx, broken at middle of body. The figure is very rude, consisting of no more than a head and neck (in full face), set upon a winged body (whether of a lion or of some other animal it is impossible to determine). The technique is most interesting, for all the surfaces of the face are plane surfaces, and appear to have been made with a knife or some similar tool; this is true, too, of the wing. Moreover, there are no traces of paint on the head or on the wing, whereas they are plentiful on the other parts of the figure. It appears, then, that the figure was finished and painted, and at some later time the surfaces which show the knife marks were formed by cutting away the original contours. The paint, which appears on legs and body, is red. Height, 11 cm. Yellow clay.

An interesting head for comparison is published by Tsountas, Ἐφ. Ἀρχ. 1892, p. 13, pl. iv. 4 and 4[a]; cf. also the poros heads from the Acropolis (*Rev. Arch.* XVII. [1891], pp. 304 ff. pl. x.), which, some have held, were made by a workman during the noonday rest, exactly as our figure may have been remodeled.

115. (Fig. 46.) Small sphinx, head missing. The head was apparently feminine, for two locks of hair appear in front of each shoulder. No traces of color. Height, 4.5 cm. Clay, light yellow.


Fig. 46.

116. Fragment of similar sphinx, only front leg, body, and beginning of wing preserved. Traces of white. Height, 4.5 cm. Clay, brown.

117. (Fig. 47.) Small figure on a horse, galloping to left — plaque, stamped on both sides. Rude modeling, but with some attempt at representing muscles of horse by means of grooves. Surface, green enamel. Height, 6.5 cm. Light, sandy material.


Fig. 47.

This figure is stamped as Egyptian by its enamel. Moreover, Professor Petrie, in his *Naukratis* (p. 14), speaks of "figures of light, friable, sandy ware" — a description which applies exactly to our plaque; and Professor Ernest Gardner informs us that some of these figures were exactly similar to ours. There can be no doubt, then, that we have here an imported article, as is also the case with a small fragment of similar material and glaze — the lower portion of a squatting figure, very much like the type of the Egyptian Bes, Nos. 111–113.

VII. EARLY ARCHAIC.

GROUP A: HAND-MADE FIGURES.

118. (Fig. 48.) Standing male figure, both legs, left arm, and right forearm missing. The figure presents many analogies to primitive Argive figures — the eyes are round lumps, the nose is almost a beak, and the hair consists of four strands falling to the shoulders behind and a wavy curl on top of the head. Yet the mouth and chin are plainly indicated, and there is some attempt at modeling in the body, which produces something the effect of the early Apollo figures. The body is covered with a thick white slip, with applied red on hair, red lines at breast and waist, and red hatchings on legs (meant to represent pattern on chiton?). Height, 11 cm. Clay, red.


Fig. 48.

119. Fragment of seated male figure, broken at hips. The upper part is a mere wedge, to which was attached a face in front, and a mass of hair behind. The αἰδοῖα are roughly represented, but far too high. Slight traces of dark brown on left arm, back of head and lower abdomen. Height, 9 cm. Clay, straw.

120. (Fig. 49.) Standing female figure, rudely modeled by hand, but showing an attempt to distinguish the features of the face. The

VI. FIGURES UNDER ORIENTAL INFLUENCE.

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Fig. 42.

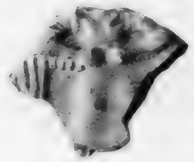
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111. (Fig. 45.) Squatting male figure, type of the Egyptian Bes, broken at knees. The figure is that of a dwarf with hands placed on the abdomen, which is abnormally developed. Hair, a mass with horizontal grooves. No trace of color. Height, 6 cm. Red clay.


Fig. 45.

The wide distribution of this class of figures may be seen from Orsi's note on the find at Megara Hyblaea, *Mon. Ant.* I. p. 838, note 1. Cf. the figure there given, pl. vi. 4. The development of this type is traced by Heuzey, 'Sur quelques représentations du dieu grotesque appelé Bès par les Égyptiens,' *Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres*, 1879, p. 140.

112. Six replicas of No. 111, all more or less broken. Same clay, some traces of white coat.

113. Similar figure of smaller size, feet broken away. No trace of color. Height, 5 cm. Dark yellow clay.

114. (Plate XLVIII. 16.) Fragment of large sphinx, broken at middle of body. The figure is very rude, consisting of no more than a head and neck (in full face), set upon a winged body (whether of a lion or of some other animal it is impossible to determine). The technique is most interesting, for all the surfaces of the face are plane surfaces, and appear to have been made with a knife or some similar tool; this is true, too, of the wing. Moreover, there are no traces of paint on the head or on the wing, whereas they are plentiful on the other parts of the figure. It appears, then, that the figure was finished and painted, and at some later time the surfaces which show the knife marks were formed by cutting away the original contours. The paint, which appears on legs and body, is red. Height, 11 cm. Yellow clay.

An interesting head for comparison is published by Tsountas, Ἐφ. Ἀρχ. 1892, p. 13, pl. iv. 4 and 4[a]; cf. also the poros heads from the Acropolis (*Rev. Arch.* XVII. [1891], pp. 304 ff. pl. x.), which, some have held, were made by a workman during the noonday rest, exactly as our figure may have been remodeled.

115. (Fig. 46.) Small sphinx, head missing. The head was apparently feminine, for two locks of hair appear in front of each shoulder. No traces of color. Height, 4.5 cm. Clay, light yellow.


Fig. 46.

116. Fragment of similar sphinx, only front leg, body, and beginning of wing preserved. Traces of white. Height, 4.5 cm. Clay, brown.

117. (Fig. 47.) Small figure on a horse, galloping to left — plaque, stamped on both sides. Rude modeling, but with some attempt at representing muscles of horse by means of grooves. Surface, green enamel. Height, 6.5 cm. Light, sandy material.

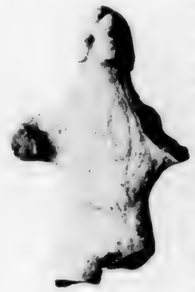

Fig. 47.

This figure is stamped as Egyptian by its enamel. Moreover, Professor Petrie, in his *Naukratis* (p. 14), speaks of "figures of light, friable, sandy ware" — a description which applies exactly to our plaque; and Professor Ernest Gardner informs us that some of these figures were exactly similar to ours. There can be no doubt, then, that we have here an imported article, as is also the case with a small fragment of similar material and glaze — the lower portion of a squatting figure, very much like the type of the Egyptian Bes, Nos. 111–113.

VII. EARLY ARCHAIC.

GROUP A: HAND-MADE FIGURES.

118. (Fig. 48.) Standing male figure, both legs, left arm, and right forearm missing. The figure presents many analogies to primitive Argive figures — the eyes are round lumps, the nose is almost a beak, and the hair consists of four strands falling to the shoulders behind and a wavy curl on top of the head. Yet the mouth and chin are plainly indicated, and there is some attempt at modeling in the body, which produces something the effect of the early Apollo figures. The body is covered with a thick white slip, with applied red on hair, red lines at breast and waist, and red hatchings on legs (meant to represent pattern on chiton?). Height, 11 cm. Clay, red.


Fig. 48.

119. Fragment of seated male figure, broken at hips. The upper part is a mere wedge, to which was attached a face in front, and a mass of hair behind. The *αἰδοῖα* are roughly represented, but far too high. Slight traces of dark brown on left arm, back of head and lower abdomen. Height, 9 cm. Clay, straw.

120. (Fig. 49.) Standing female figure, rudely modeled by hand, but showing an attempt to distinguish the features of the face. The

nose, now broken, was distinguished from the chin; the eyes are incised circles; the hair is a series of notched strands falling to shoulders. The arms are raised to the breasts, and three grooves at the end of each mark the fingers. General traces of white. Height, 8 cm. Light yellow clay.



Fig. 49. Fig. 50.

121. Standing female figure with remarkably long neck, broken at waist, arms missing. Face very rude, nose very much like a beak, but distinguished from chin, mouth not indicated. The breasts are rudely applied lumps. Eyes, two incised circles. Hair consisted of notched mass at top and strands down the back (now broken off). White color is preserved in circles of eyes. Height, 10.5 cm. Clay, reddish yellow.

122. (Fig. 50.) Standing female figure with nose and mouth carefully distinguished. Eyes, however, are lumps — a reminiscence of the earlier types. Hair, nine notched strands, spreading over shoulders. A slight groove from shoulder to shoulder marks the fold of the chiton. The forearms (now broken off) were extended forward. Three grooves extend from waist to bottom of chiton on each side, doubtless to represent folds. The ground color is black, covered with yellow dots, even on the parts of the neck above fold of chiton; between the grooves, on the lower part of the figure, are hatchings of light yellow. Height, 11.5 cm. Clay, grayish yellow.

123. (Fig. 51.) Rudely made figure with round body; head, right arm, and left forearm missing. Traces of white. Height, 8.5 cm. Red clay.



Fig. 51.

This figure stands in the same relation to the two preceding figures that the statue of Cheramyes (cf. Collignon, *Hist. de la Sculpture Grecque*, I. p. 163, fig. 73) does to the Nicandra statue (*ibid.* p. 120, fig. 59). It is an attempt to vary the monotony of the square, board-shaped body by another form, which, however, is equally summary and untrue to nature.

124. (Fig. 52.) Rude round figure of a pregnant woman, head, arms, and feet broken away. The feet were attached to two stumps inserted in the lower part of the figure. The edge of the chiton below the neck is carefully indicated by a deep cutting. White slip. Height, 9.5 cm. Yellow clay.



Fig. 52.

Representations of pregnant women are not uncommon in all periods of Greek terra-cottas; cf. Schliemann, *Bericht über die Ausgrabungen in Troia im Jahre 1890*, pl. i. 3; Dörpfeld, *Troia, 1893*, p. 101; Schöne, *Gr. Reliefs*, p. 67, No. 142, pl. xxxvi. (= *Bull.* 1868, p. 54, No. 20); Stephani, *Compte Rendu*, 1865, pp. 193, 194, pl. vi. 6; *Ant. du Bosphore Cimmérien*, II. p. 91, pl. lxix. 7. But all these figures are plainly intended for caricatures, whereas our figure, as a temple gift, can hardly be anything but a thank offering for a successful childbirth. It is appropriately dedicated to Hera as Εἰλείθυια. (Cf. Hesych, *s. v.* Εἰλαθυίας· Ἥρα ἐν Ἄργει, and on the whole subject, Roscher, *Lexicon der Mythologie*, I² pp. 2087 ff.

125. Forty-four fragments of figures similar to Nos. 118–122, mostly bodies of the σανίς type, roughly made by hand. A few show traces of applied plastic ornamentation. The painted ornamentation is simple; it consists principally of lines and dots, usually in red and black, although there are a few cases of applied white (to mark the girdle), and one figure has two purple bands falling from the girdle in front. The only pattern is found on the right side of one figure, where we may suppose the fold of the Doric chiton to be:—



126. (Fig. 53.) Torso of female figure of coarse clay, round-bodied type. On the right shoulder is an elaborate fibula of the "clover-leaf" type, and the left shoulder shows traces of a similar fibula. At the back are traces of strands of hair, and also of an applied band which was stretched from shoulder to shoulder. The ground color is red, covered by a black coat, with applied yellow lines at waist and neck, and yellow dots on fibula. Height, 6 cm. Clay, yellow.



Fig. 53.

127. Similar torso, forearms (which were extended) broken off. Traces of four strands of hair at back, and of one strand in front of each shoulder. Fold of chiton represented plastically and decorated with "laufender Hund" pattern in light brown. The entire body is covered with a light brown coat, to which is applied dark brown on bust and arms. Dark brown stripe at waist. Height, 5.5 cm. Yellow clay.

128. Third torso of similar style, arms broken. Fold of chiton moulded in the clay, both at front and back. Traces of long necklace from shoulder to shoulder behind. Hair was six notched strands. Fragment of large fibula on left shoulder. Ground color red, changing to black (apparently from burning). Applied white on neck and fibula; white line at waist. Height, 5 cm. Dark yellow clay.

129. Fragment of heavy, seated figure of coarse clay (similar to the clay of Nos. 126–128), broken at neck and below knees. The woman leans forward and rests her elbows on her knees. The forearms are broken off. Color, black, with red lines at upper edge of chiton and at waist. Traces of large fibula at left shoulder. Height, 8.5 cm. Yellow clay.

Here, too, we may place, as a transitional type —

130. (Plate XLVII. 3.) Bust and head of rudely made figure of archaic style, with a modeled head. This figure presents striking analogies to the advanced Argive figures; it has a low stephane, six large curls, large earrings, and a close-fitting necklace. Yet it is a real archaic figure; the body was of the same type as Nos. 126–129. Paint applied directly; pupils of eyes, hair, and body, black; brows, brown. Height, 6.5 cm. Yellow clay.

131. Fragments of four replicas of No. 130, with varying amounts of plastic ornament. Three have necklaces, the fourth is broken close to the neck. One has marks of a long necklace from shoulder to shoulder at the back. Two have applied earrings, while of the others, one has the earrings represented by circles sunk in the clay, the other has none at all. The hair consists in three cases of curls; in the other it is a mass. All show marks of having had a stephane. The system of color is the same in all — body, solid color, in one case black, shading to red; in the others, black; necklace, a row of dots; pupils of eyes, brows, and hair, same color as the body — in one case red, in the others, black. One figure has a black dot in the centre of each earring. Height, 3.5 cm. to 6.5 cm. Clay, yellow, except one figure, which is of gray clay.

GROUP B: MOULD-MADE FIGURES.

132. (Fig. 54.) Fragment of standing female figure, broken at neck and waist, arms missing. The modeling is careless. The figure is interesting only because it has at the shoulders round pins similar to those of the early and advanced Argive styles (cf. p. 8). General traces of white. Height, 4 cm. Clay, red.

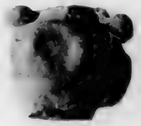


Fig. 54.

133. Fragment of similar figure, without pins. The lower body is no more than a squared lump of clay; the arms are stumps. Fold of chiton represented by a slight groove. Traces of white. Height, 7.5 cm. Reddish yellow clay.

134. (Fig. 55.) Moulded female figure, broken at neck and above knees. She wears a sleeveless chiton — the upper edge plainly marked by a depres-



Fig. 55.

nose, now broken, was distinguished from the chin; the eyes are incised circles; the hair is a series of notched strands falling to shoulders. The arms are raised to the breasts, and three grooves at the end of each mark the fingers. General traces of white. Height, 8 cm. Light yellow clay.



Fig. 49.



Fig. 50.

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123. (Fig. 51.) Rudely made figure with round body; head, right arm, and left forearm missing. Traces of white. Height, 8.5 cm. Red clay.



Fig. 51.

This figure stands in the same relation to the two preceding figures that the statue of Cheramyes (cf. Collignon, *Hist. de la Sculpture Grecque*, I. p. 163, fig. 73) does to the Nicandra statue (*ibid.* p. 120, fig. 59). It is an attempt to vary the monotony of the square, board-shaped body by another form, which, however, is equally summary and untrue to nature.

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Fig. 52.

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Fig. 53.

127. Similar torso, forearms (which were extended) broken off. Traces of four strands of hair at back, and of one strand in front of each shoulder. Fold of chiton represented plastically and decorated with "laufender Hund" pattern in light brown. The entire body is covered with a light brown coat, to which is applied dark brown on bust and arms. Dark brown stripe at waist. Height, 5.5 cm. Yellow clay.

128. Third torso of similar style, arms broken. Fold of chiton moulded in the clay, both at front and back. Traces of long necklace from shoulder to shoulder behind. Hair was six notched strands. Fragment of large fibula on left shoulder. Ground color red, changing to black (apparently from burning). Applied white on neck and fibula; white line at waist. Height, 5 cm. Dark yellow clay.

129. Fragment of heavy, seated figure of coarse clay (similar to the clay of Nos. 126–128), broken at neck and below knees. The woman leans forward and rests her elbows on her knees. The forearms are broken off. Color, black, with red lines at upper edge of chiton and at waist. Traces of large fibula at left shoulder. Height, 8.5 cm. Yellow clay.

Here, too, we may place, as a transitional type —

130. (Plate XLVII. 3.) Bust and head of rudely made figure of archaic style, with a modeled head. This figure presents striking analogies to the advanced Argive figures; it has a low stephane, six large curls, large earrings, and a close-fitting necklace. Yet it is a real archaic figure; the body was of the same type as Nos. 126–129. Paint applied directly: pupils of eyes, hair, and body, black; brows, brown. Height, 6.5 cm. Yellow clay.

131. Fragments of four replicas of No. 130, with varying amounts of plastic ornament. Three have necklaces, the fourth is broken close to the neck. One has marks of a long necklace from shoulder to shoulder at the back. Two have applied earrings, while of the others, one has the earrings represented by circles sunk in the clay, the other has none at all. The hair consists in three cases of curls; in the other it is a mass. All show marks of having had a stephane. The system of color is the same in all — body, solid color, in one case black, shading to red; in the others, black; necklace, a row of dots; pupils of eyes, brows, and hair, same color as the body — in one case red, in the others, black. One figure has a black dot in the centre of each earring. Height, 3.5 cm. to 6.5 cm. Clay, yellow, except one figure, which is of gray clay.

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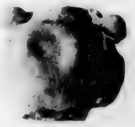


Fig. 54.

133. Fragment of similar figure, without pins. The lower body is no more than a squared lump of clay; the arms are stumps. Fold of chiton represented by a slight groove. Traces of white. Height, 7.5 cm. Reddish yellow clay.



Fig. 55.

134. (Fig. 55.) Moulded female figure, broken at neck and above knees. She wears a sleeveless chiton — the upper edge plainly marked by a depres-

sion — and necklace with pendant. At each side of neck, one or two curls of a long lock of hair. The arms fall close to the sides. The relief is very flat, but there is an attempt to represent the breasts. No trace of color. Height, 7.5 cm. Clay, dark red.


Fig. 56.


Fig. 57.

135. (Fig. 56.) Badly worn figure of similar make, no ornamentation. At height of shoulders, two supports were fixed to the back to hold the figure upright (cf. the Argive seated figures). Traces of white. Height, 8.5 cm. Yellow clay.

136. Three fragments of similar figures, all showing remains of supports at level of shoulders. They all show traces of white coat. Heights, 4.5 cm. to 8 cm. Yellow clay.

137. (Fig. 57.) Lower part of large moulded figure, in very high relief (broken at waist). The chiton hangs in a long straight fold between the legs (cf. *Musées d'Athènes*, pl. v.). Arms are pressed close to sides. Color, bright red; arms, pink. Height, 10 cm. Reddish yellow clay.


Fig. 58.

138. (Fig. 58.) Similar fragment in lower relief, with line ornamentation in purple (simple vertical lines, joined by horizontal and criss-cross lines; at sides, rude horizontal lines only). Height, 6 cm. Clay, reddish yellow.

139. Fragments of three similar figures in low relief, arms always at sides. In two cases, the toes are modeled rather carefully.


Fig. 59.

140. (Fig. 59.) Moulded figure, broken at neck. Hands still at sides. From the waist down, the figure is a mere case, in which all the forms disappear, but there is an attempt at representing the feet. Above the waist, the modeling is summary, but fairly accurate. The breasts are clearly brought out, as are also the lower edge of the chiton and the indentation of the girdle (cf. *Musées d'Athènes*, pl. x.). The figure stands on a narrow plinth, which was included in the mould. White slip, with red bands around lower part of chiton. Height, 7 cm. Clay, gray.


Fig. 60.

141. Exact replica of No. 140, similarly broken, decorated with red bands. Height, 7 cm. Clay, gray.

142. Very similar figure, but not replica. The proportions are slightly smaller than those of No. 140 and No. 141; the figure may have been made from a mould which was itself made from No. 140 or No. 141 and shrank in baking.[1] It shows only traces of white. Height, 7 cm. Red clay.

143. (Fig. 60.) Fragment of similar figure, broken at waist. The hair is represented by notches and falls to shoulders. The ear is too high, as is usual in archaic work. The edges of the chiton at neck and waist are distinctly marked. Traces of white, of red on chiton. Height, 4.5 cm. Red clay.


Fig. 61.

144. (Fig. 61.) Fragment from the same mould as No. 143, minus face and broken at knees. This figure shows not only the lower edge of the fold of the chiton, but also the indentation of the girdle. Arms held close to sides. Slight traces of red. Height, 7.5 cm. Red clay.


Fig. 62.

145. Upper part of similar figure in high calathus (broken at waist). Fold of chiton and indentation of girdle well marked. Color, white; traces of red on calathus. Height, 5 cm. Clay, red.

146. Small fragment of similar figure, broken at waist and below knees. Behind each hand (arms still hang close to sides) a small hole, possibly for suspending the figure. Traces of white. Height, 4.5 cm. Red clay.

147. (Fig. 62.) Similar figure, showing wide border all around, where the clay ran over the

[1] Cf. Martha, *Cat. des Fig. du Mus. d'Athènes*, p. xxiii, on the subject of "surmoulages."

edges of the mould. Arms hang close to sides. Edges of chiton marked by grooves at neck and waist, also at sides. The hair is represented by grooves, worked after the figure left the mould. Slight traces of red. Height, 8.5 cm. Dark yellow clay.

148. (Plate XLVI. 5.) Figure from the same mould, with stephane added. Traces of white on face, of red on chiton. Height, 8.5 cm. Yellow clay.

149. Fragment from the same mould as Nos. 147 and 148, broken at neck and knees.

150. (Plate XLVI. 14.) Bust of large standing figure broken at waist. High round stephane. The hair is carefully represented by curls in low relief over forehead, and three long curls in front of each shoulder. The eyes are remarkably long and triangular. Traces of white, of red on left side. Height, 10 cm. Gray clay.

151. (Fig. 63.) Somewhat similar fragment, broken at waist, face badly broken. Edges of chiton very plainly marked, also edge of girdle. Hair, large mass at back. Ears, remarkably large. No traces of color. Height, 10 cm. Red clay.


Fig. 63.

152. Fragment of similar figure, broken at waist and neck. General traces of white. Height, 7 cm. Red clay.

153. (Plate XLVI. 1.) Rudely modeled figure, with arms bent at elbows, hands touching shoulders. No attempt at representing details. Traces of white. Height, 7 cm. Yellow clay.


Fig. 64.

154. (Fig. 64.) Fragment of figure with arms similarly bent (broken at neck and above knees). Very careless modeling. Traces of white. Two red lines at waist, one at neck. Height, 7 cm. Greenish yellow clay.

155. (Plate XLVI. 6.) Standing figure in stephane, with hands raised to breast. All the lines are remarkably deep; they seem to have been made with a pointed instrument. Hair treated in notches. Two grooves mark the lower border of chiton. No trace of color. Height, 8 cm. Clay, dark red, shading to black.

156. Two fragments of very similar figures, with hands raised to breasts (both broken at neck). One has white slip, with red horizontal lines, one at upper edge of chiton, three at waist, two at lower edge of chiton.

157. (Plate XLVI. 2.) Somewhat more advanced archaic figure, showing an attempt to represent the folds of the chiton. The figure wears the stephane, and the arms are represented as bent at the elbow, although the forearms are mere stumps. Traces of white coat. Height, 8.5 cm. Red clay.

158. Fourteen fragments of similar figures, mostly lower parts with folds in low relief. One is an exact replica of No. 157.


Fig. 65.

159. Figure very similar to No. 157 — folds of chiton fairly well given (broken at neck). The arms hang slightly forward, and are entirely given in the mould. Traces of white. Height, 6 cm. Clay, reddish yellow.

160. Fragment of left side of archaic figure — forearm and hand grasping edge of chiton preserved — with fairly careful reproduction of folds. This figure is not flat at back, but hollow, with thin walls, corresponding to the later technique. No traces of color. Height, 8 cm. Red clay.

161. (Fig. 65.) Lower part of archaic figure, showing still greater development of folds of chiton. Here, not only the vertical folds which fall from the arm are brought out, but the folds between the legs are also fairly well reproduced. The modeling of these folds is softer than in most of the other figures of this class, giving an impression of greater freedom. This may partly be due to the fact that this was perhaps made

sion — and necklace with pendant. At each side of neck, one or two curls of a long lock of hair. The arms fall close to the sides. The relief is very flat, but there is an attempt to represent the breasts. No trace of color. Height, 7.5 cm. Clay, dark red.



Fig. 56.



Fig. 57.

135. (Fig. 56.) Badly worn figure of similar make, no ornamentation. At height of shoulders, two supports were fixed to the back to hold the figure upright (cf. the Argive seated figures). Traces of white. Height, 8.5 cm. Yellow clay.

136. Three fragments of similar figures, all showing remains of supports at level of shoulders. They all show traces of white coat. Heights, 4.5 cm. to 8 cm. Yellow clay.

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138. (Fig. 58.) Similar fragment in lower relief, with line ornamentation in purple (simple vertical lines, joined by horizontal and criss-cross lines; at sides, rude horizontal lines only). Height, 6 cm. Clay, reddish yellow.

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143. (Fig. 60.) Fragment of similar figure, broken at waist. The hair is represented by notches and falls to shoulders. The ear is too high, as is usual in archaic work. The edges of the chiton at neck and waist are distinctly marked. Traces of white, of red on chiton. Height, 4.5 cm. Red clay.



Fig. 61.

144. (Fig. 61.) Fragment from the same mould as No. 143, minus face and broken at knees. This figure shows not only the lower edge of the fold of the chiton, but also the indentation of the girdle. Arms held close to sides. Slight traces of red. Height, 7.5 cm. Red clay.

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[1] Cf. Martha, *Cat. des Fig. du Mus. d'Athènes*, p. xxiii, on the subject of "surmoulages."

edges of the mould. Arms hang close to sides. Edges of chiton marked by grooves at neck and waist, also at sides. The hair is represented by grooves, worked after the figure left the mould. Slight traces of red. Height, 8.5 cm. Dark yellow clay.

148. (Plate XLVI. 5.) Figure from the same mould, with stephane added. Traces of white on face, of red on chiton. Height, 8.5 cm. Yellow clay.

149. Fragment from the same mould as Nos. 147 and 148, broken at neck and knees.

150. (Plate XLVI. 14.) Bust of large standing figure broken at waist. High round stephane. The hair is carefully represented by curls in low relief over forehead, and three long curls in front of each shoulder. The eyes are remarkably long and triangular. Traces of white, of red on left side. Height, 10 cm. Gray clay.

151. (Fig. 63.) Somewhat similar fragment, broken at waist, face badly broken. Edges of chiton very plainly marked, also edge of girdle. Hair, large mass at back. Ears, remarkably large. No traces of color. Height, 10 cm. Red clay.



Fig. 63.

152. Fragment of similar figure, broken at waist and neck. General traces of white. Height, 7 cm. Red clay.

153. (Plate XLVI. 1.) Rudely modeled figure, with arms bent at elbows, hands touching shoulders. No attempt at representing details. Traces of white. Height, 7 cm. Yellow clay.



Fig. 64.

154. (Fig. 64.) Fragment of figure with arms similarly bent (broken at neck and above knees). Very careless modeling. Traces of white. Two red lines at waist, one at neck. Height, 7 cm. Greenish yellow clay.

155. (Plate XLVI. 6.) Standing figure in stephane, with hands raised to breast. All the lines are remarkably deep; they seem to have been made with a pointed instrument. Hair treated in notches. Two grooves mark the lower border of chiton. No trace of color. Height, 8 cm. Clay, dark red, shading to black.

156. Two fragments of very similar figures, with hands raised to breasts (both broken at neck). One has white slip, with red horizontal lines, one at upper edge of chiton, three at waist, two at lower edge of chiton.

157. (Plate XLVI. 2.) Somewhat more advanced archaic figure, showing an attempt to represent the folds of the chiton. The figure wears the stephane, and the arms are represented as bent at the elbow, although the forearms are mere stumps. Traces of white coat. Height, 8.5 cm. Red clay.

158. Fourteen fragments of similar figures, mostly lower parts with folds in low relief. One is an exact replica of No. 157.



Fig. 65.

159. Figure very similar to No. 157 — folds of chiton fairly well given (broken at neck). The arms hang slightly forward, and are entirely given in the mould. Traces of white. Height, 6 cm. Clay, reddish yellow.

160. Fragment of left side of archaic figure — forearm and hand grasping edge of chiton preserved — with fairly careful reproduction of folds. This figure is not flat at back, but hollow, with thin walls, corresponding to the later technique. No traces of color. Height, 8 cm. Red clay.

161. (Fig. 65.) Lower part of archaic figure, showing still greater development of folds of chiton. Here, not only the vertical folds which fall from the arm are brought out, but the folds between the legs are also fairly well reproduced. The modeling of these folds is softer than in most of the other figures of this class, giving an impression of greater freedom. This may partly be due to the fact that this was perhaps made

when the mould itself was somewhat worn, and the lines, therefore, not so sharp. No traces of color. Height, 8 cm. Light yellow clay.

162. Two fragments of similarly draped figures. One of them is painted a bright red; the other shows a very plain thumb-mark at the back.

163. (Plate XLVI. 3.) Figure of the "Spes" type, broken at neck and at knees. The himation falls from right shoulder and passes under right arm. The chiton was doubtless indicated in color. Right hand raised to waist, and pierced by a hole for an attribute (perhaps a flower?). Left hand holds edge of himation. The folds are very carefully indicated. Himation, red — color applied directly to clay. Height, 8.5 cm. Yellow clay.

Cf. Winter, 'Die Terrakotten von der Akropolis,' *Arch. Anz.* 1893, pp. 140 ff., esp. figs. 5, 11, 15; Lechat, 'Terres Cuites de Corcyre,' *B. C. H.* XV. (1891), pp. 1–112, esp. p. 79, No. 74, pl. viii. 2 (the specimen there mentioned had a hole in the hand, exactly as No. 163 has); Heuzey, *Fig. Ant.* pl. xl. 2 (from Cyrenaica); Martha, *Cat. des Fig. du Mus. d'Athènes*, No. 733 (provenance unknown, but probably Greek). The best short discussion of the "Spes" figures is that of Orsi, in his publication of the Megara Hyblaea terra-cottas; see *Mon. Ant.* I. pp. 924 ff.

164. (Plate XLVI. 10.) Fragment of figure similar to No. 163 — broken at neck and waist. Same arrangement of himation, same careful adjustment of folds. Right hand raised to waist, left doubtless grasped edge of garment. Slight traces of white. Height, 5 cm. Light yellow clay.

165. Fragment of archaic figure, broken above waist and below knees. The folds are hastily indicated. The left hand hangs somewhat forward and holds an apple. At the back is a very plain thumb-mark. Traces of white. Height, 6.5 cm. Dark red clay.

166. (Plate XLVI. 9.) Aphrodite of archaic type, broken at neck and knees. Folds of chiton barely indicated. Both hands are raised, the right, carrying a dove, to breast; the left, with flower, below it. Traces of white. Height, 5.5 cm. Clay, reddish yellow and very fine.

167. Fragment of similar figure, only left hand with dove and right hand side of drapery preserved. Traces of white. Height, 4.5 cm. Fine yellow clay.

168. (Fig. 66.) Similar Aphrodite, broken at neck and above knees. Right hand, raised to breast, carries dove; left grasps edge of sleeve of himation. Traces of white. Height, 7 cm. Dark red clay.



Fig. 66.

169. Similar figure, badly broken. Right holds dove, left raised edge of himation. The folds of the himation are carefully given. On the shoulders, traces of three locks of hair. Traces of white. Height, 7 cm. Clay, reddish yellow.

170. Fragment of similar figure, broken at neck and waist. Right hand holds dove. In front of shoulders, four notched strands form the hair. Traces of white. Height, 6 cm. Reddish yellow clay.

171. Second fragment, broken at neck and just below breasts. Right holds dove. Traces of white. Height, 2.5 cm. Fine yellow clay.

Cf. on all these figures, Nos. 166–171, the marble statue in Lyons (*Gaz. Arch.* 1876, p. 133, pl. xxxi.); also the terra-cottas, Heuzey, *Fig. Ant.* pl. xii. 5; Orsi, 'Megara Hyblaea,' *Mon. Ant.* I. p. 925, pl. vii. 11; Michaelis, *Arch. Zeit.* 1864, p. 137, pl. clxxxii. 1; Martha, *Cat. des Fig. du Mus. d'Athènes*, No. 433.

172. (Plate XLVI. 4.) Figure of usual archaic type, broken at neck and at knees. The figure wears the chiton, with a thick fold between the legs, and over it another garment (χιτωνίσκος?) reaching to the knees (cf. the statue, *Musées d'Athènes*, pl. v.). Both hands are raised in front of body, the left below the right, and each holds a fruit. Traces of white. Height, 7.5 cm. Clay, light yellow and very fine.

Cf. p. 15; Heuzey, *Fig. Ant.* pl. xl. 2; Martha, *Cat. des Fig. du Mus. d'Athènes*, No. 735.

173. Very similar fragment, broken at neck and thighs. Left hand holds a fruit; attribute of right uncertain, but probably also a fruit. Traces of white. Height, 5 cm. Fine yellow clay.

174. Fragment of archaic figure, broken at neck and waist. Left hand at breasts, holds flower. Traces of white. Height, 4 cm. Red clay.

This type is very common; cf. Orsi, 'Megara Hyblaea,' *Mon. Ant.* I. p. 924, pl. vii. 4, pl. viii. 3; *idem*, 'D' Una Città Greca a Terravecchia presso Granmichele in Provincia di Catania,' *ibid.* VII. pp. 230 ff., pl. iv.; Clarac, *Musée de Sculpture*, pl. dcxxxii. J. 1449 H; Lechat, 'Terres Cuites de Corcyre,' *B. C. H.* XV. (1891), p. 30, No. 7, pl. i. 2; p. 33, No. 14, pl. i. 3.

175. (Plate XLVI. 8.) Fragment of archaic figure, broken at neck and at waist. She wears the himation falling from right shoulder to left side, and holds in front of her, with her right hand, a wreath. Traces of red on himation. Height, 4.5 cm. Clay, yellow and fine.

Cf. the statue from the Acropolis (Collignon, *Hist. de la Sculpture Grecque*, I. p. 353, fig. 178), which holds a wreath in the right hand and a jar in the left; Orsi, 'D' Una Città Greca a Terravecchia presso Granmichele in Provincia di Catania,' *Mon. Ant.* VII. p. 234, fig. 24; Kekulé, *Ant. Terrakotten*, II. p. 9, fig. 4. It seems not unlikely that this figure has reference to the cult of Hera Antheia.

176. (Plate XLVI. 7.) Standing figure in chiton (edge at neck and waist, with folds at shoulder and below girdle carefully rendered). Broken at neck and at knees. Right hand holds a small animal (probably a hare); left grasps edge of sleeve of chiton at breast. At back are marks of a thumb and two fingers. Traces of white. Height, 11 cm. Dark red clay.

Cf. the fragment of a poros statuette, Salzmann, *La Nécropole de Camiros*, pl. ix.; Bernouilli, *Aphrodite*, p. 38.

177. Fragments of two replicas of No. 176, showing the same finger-marks at back. Traces of white. Height, 7.5 cm. and 8.5 cm. respectively. Same clay as No. 176.

178. Twenty fragments of figures similar to Nos. 176 and 177, principally small bits of drapery. Dark red clay.

179. (Plate XLVI. 11.) Similar archaic figure, broken at neck. She wears chiton with thick fold between legs, and long overgarment like that of No. 172. Both hands hold attributes — right, an animal (stag?), left, bow (cf. p. 15). The break at the left shoulder is interesting, as it shows the method of manufacture by layers — the outer layer is of much finer clay than the inner (filling) layer. Traces of white. Height, 11.5 cm. Fine, light yellow clay.

Cf. Heuzey, *Fig. Ant.* pl. xviii. bis. 1 (from Thespiae); Stephani, *Compte Rendu*, 1872, p. 161, pl. iii. 4 (from Kertsch; the figure looks as if it had come from the same mould as No. 179); Lechat, 'Terres Cuites de Corcyre,' *B. C. H.* XV. (1891), p. 48, No. 37, pl. iii. 2; p. 51, No. 40, pl. iii. 1; Berlin Museum, 6831 (Attica) and 6262 (Thespiae); Syracuse, large terra-cotta room, case III. (Megara Hyblaea).

180. Four fragments of figures similar to Nos. 166–179, attributes indistinguishable on account of breakage. Traces of white. Clay, fine, varying from yellow to red.

181. Eight fragments of drapery very similar to that of Nos. 166–179, but belonging to hollow figures with thin walls. Traces of white slip; slight traces of red. Heights, 4 cm. to 13 cm. Clay, light yellow to red.

182. Basis of large statue of archaic type, with fragment of the figure from the knees down. The feet are carefully modeled and fairly correct. The bottom is pierced by a round vent. The chiton was red. Height, 7 cm. Height of plinth, 2 cm. Length, 6 cm. Width, 5 cm. Clay, reddish yellow.

183. Six fragments of similar bases, usually with traces of feet only. General traces of white. The dimensions vary from 3 cm. × 3.5 cm. to 5.5 cm. × 7.5 cm. Clay, light red to yellow.

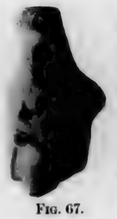


Fig. 67.

184. (Fig. 67.) Very rude seated figure, broken at bottom. The figure varies little from the standing type, except that it is slightly bent at the middle and has two supports behind (cf. No. 135). The arms, which are resting on the knees, are little better than two stumps. On the breast is a pendant. The upper part forms a rude stephane. The figure hardly appears to be modeled at all, yet the surface shows plainly that it was. Traces of white. Height, 5.5 cm. Red clay.

185. Similar figure with supports behind. She wears stephane and necklace with pendant (these made in the mould), and long veil falling to shoulders (a separate piece added after the figure was complete). Traces of white; three red lines on bottom of chiton. Height, 10.5 cm. Reddish yellow clay.

186. Third figure of the same sort with arms bent at elbows, and hands raised to shoulders. Traces of white. Height, 8 cm. Light yellow clay.

when the mould itself was somewhat worn, and the lines, therefore, not so sharp. No traces of color. Height, 8 cm. Light yellow clay.

162. Two fragments of similarly draped figures. One of them is painted a bright red; the other shows a very plain thumb-mark at the back.

163. (Plate XLVI. 3.) Figure of the "Spes" type, broken at neck and at knees. The himation falls from right shoulder and passes under right arm. The chiton was doubtless indicated in color. Right hand raised to waist, and pierced by a hole for an attribute (perhaps a flower?). Left hand holds edge of himation. The folds are very carefully indicated. Himation, red — color applied directly to clay. Height, 8.5 cm. Yellow clay.

Cf. Winter, 'Die Terrakotten von der Akropolis,' *Arch. Anz.* 1893, pp. 140 ff., esp. figs. 5, 11, 15; Lechat, 'Terres Cuites de Corcyre,' *B. C. H.* XV. (1891), pp. 1–112, esp. p. 79, No. 74, pl. viii. 2 (the specimen there mentioned had a hole in the hand, exactly as No. 163 has); Heuzey, *Fig. Ant.* pl. xl. 2 (from Cyrenaica); Martha, *Cat. des Fig. du Mus. d'Athènes*, No. 733 (provenance unknown, but probably Greek). The best short discussion of the "Spes" figures is that of Orsi, in his publication of the Megara Hyblaea terra-cottas; see *Mon. Ant.* I. pp. 924 ff.

164. (Plate XLVI. 10.) Fragment of figure similar to No. 163 — broken at neck and waist. Same arrangement of himation, same careful adjustment of folds. Right hand raised to waist, left doubtless grasped edge of garment. Slight traces of white. Height, 5 cm. Light yellow clay.

165. Fragment of archaic figure, broken above waist and below knees. The folds are hastily indicated. The left hand hangs somewhat forward and holds an apple. At the back is a very plain thumb-mark. Traces of white. Height, 6.5 cm. Dark red clay.

166. (Plate XLVI. 9.) Aphrodite of archaic type, broken at neck and knees. Folds of chiton barely indicated. Both hands are raised, the right, carrying a dove, to breast; the left, with flower, below it. Traces of white. Height, 5.5 cm. Clay, reddish yellow and very fine.

167. Fragment of similar figure, only left hand with dove and right hand side of drapery preserved. Traces of white. Height, 4.5 cm. Fine yellow clay.

168. (Fig. 66.) Similar Aphrodite, broken at neck and above knees. Right hand, raised to breast, carries dove; left grasps edge of sleeve of himation. Traces of white. Height, 7 cm. Dark red clay.



Fig. 66.

169. Similar figure, badly broken. Right holds dove, left raised edge of himation. The folds of the himation are carefully given. On the shoulders, traces of three locks of hair. Traces of white. Height, 7 cm. Clay, reddish yellow.

170. Fragment of similar figure, broken at neck and waist. Right hand holds dove. In front of shoulders, four notched strands form the hair. Traces of white. Height, 6 cm. Reddish yellow clay.

171. Second fragment, broken at neck and just below breasts. Right holds dove. Traces of white. Height, 2.5 cm. Fine yellow clay.

Cf. on all these figures, Nos. 166–171, the marble statue in Lyons (*Gaz. Arch.* 1876, p. 133, pl. xxxi.); also the terra-cottas, Heuzey, *Fig. Ant.* pl. xii. 5; Orsi, 'Megara Hyblaea,' *Mon. Ant.* I. p. 925, pl. vii. 11; Michaelis, *Arch. Zeit.* 1864, p. 137, pl. clxxxii. 1; Martha, *Cat. des Fig. du Mus. d'Athènes*, No. 433.

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Cf. p. 15; Heuzey, *Fig. Ant.* pl. xl. 2; Martha, *Cat. des Fig. du Mus. d'Athènes*, No. 735.

173. Very similar fragment, broken at neck and thighs. Left hand holds a fruit; attribute of right uncertain, but probably also a fruit. Traces of white. Height, 5 cm. Fine yellow clay.

174. Fragment of archaic figure, broken at neck and waist. Left hand at breasts, holds flower. Traces of white. Height, 4 cm. Red clay.

This type is very common; cf. Orsi, 'Megara Hyblaea,' *Mon. Ant.* I. p. 924, pl. vii. 4, pl. viii. 3; *idem*, 'D' Una Città Greca a Terravecchia presso Granmichele in Provincia di Catania,'

ibid. VII. pp. 230 ff., pl. iv.; Clarac, *Musée de Sculpture*, pl. dexxxii. J. 1449 H; Lechat, 'Terres Cuites de Corcyre,' *B. C. H.* XV. (1891), p. 30, No. 7, pl. i. 2; p. 33, No. 14, pl. i. 3.

175. (Plate XLVI. 8.) Fragment of archaic figure, broken at neck and at waist. She wears the himation falling from right shoulder to left side, and holds in front of her, with her right hand, a wreath. Traces of red on himation. Height, 4.5 cm. Clay, yellow and fine.

Cf. the statue from the Acropolis (Collignon, *Hist. de la Sculpture Grecque*, I. p. 353, fig. 178), which holds a wreath in the right hand and a jar in the left; Orsi, 'D' Una Città Greca a Terravecchia presso Granmichele in Provincia di Catania,' *Mon. Ant.* VII. p. 234, fig. 24; Kekulé, *Ant. Terrakotten*, II. p. 9, fig. 4. It seems not unlikely that this figure has reference to the cult of Hera Antheia.

176. (Plate XLVI. 7.) Standing figure in chiton (edge at neck and waist, with folds at shoulder and below girdle carefully rendered). Broken at neck and at knees. Right hand holds a small animal (probably a hare); left grasps edge of sleeve of chiton at breast. At back are marks of a thumb and two fingers. Traces of white. Height, 11 cm. Dark red clay.

Cf. the fragment of a poros statuette, Salzmann, *La Nécropole de Camiros*, pl. ix.; Bernouilli, *Aphrodite*, p. 38.

177. Fragments of two replicas of No. 176, showing the same finger-marks at back. Traces of white. Height, 7.5 cm. and 8.5 cm. respectively. Same clay as No. 176.

178. Twenty fragments of figures similar to Nos. 176 and 177, principally small bits of drapery. Dark red clay.

179. (Plate XLVI. 11.) Similar archaic figure, broken at neck. She wears chiton with thick fold between legs, and long overgarment like that of No. 172. Both hands hold attributes — right, an animal (stag?), left, bow (cf. p. 15). The break at the left shoulder is interesting, as it shows the method of manufacture by layers — the outer layer is of much finer clay than the inner (filling) layer. Traces of white. Height, 11.5 cm. Fine, light yellow clay.

Cf. Heuzey, *Fig. Ant.* pl. xviii. bis. 1 (from Thespiae); Stephani, *Compte Rendu*, 1872, p. 161, pl. iii. 4 (from Kertsch; the figure looks as if it had come from the same mould as No. 179); Lechat, 'Terres Cuites de Corcyre,' *B. C. H.* XV. (1891), p. 48, No. 37, pl. iii. 2; p. 51, No. 40, pl. iii. 1; Berlin Museum, 6831 (Attica) and 6262 (Thespiae); Syracuse, large terra-cotta room, case III. (Megara Hyblaea).

180. Four fragments of figures similar to Nos. 166–179, attributes indistinguishable on account of breakage. Traces of white. Clay, fine, varying from yellow to red.

181. Eight fragments of drapery very similar to that of Nos. 166–179, but belonging to hollow figures with thin walls. Traces of white slip; slight traces of red. Heights, 4 cm. to 13 cm. Clay, light yellow to red.

182. Basis of large statue of archaic type, with fragment of the figure from the knees down. The feet are carefully modeled and fairly correct. The bottom is pierced by a round vent. The chiton was red. Height, 7 cm. Height of plinth, 2 cm. Length, 6 cm. Width, 5 cm. Clay, reddish yellow.

183. Six fragments of similar bases, usually with traces of feet only. General traces of white. The dimensions vary from 3 cm. × 3.5 cm. to 5.5 cm. × 7.5 cm. Clay, light red to yellow.



Fig. 67.

184. (Fig. 67.) Very rude seated figure, broken at bottom. The figure varies little from the standing type, except that it is slightly bent at the middle and has two supports behind (cf. No. 135). The arms, which are resting on the knees, are little better than two stumps. On the breast is a pendant. The upper part forms a rude stephane. The figure hardly appears to be modeled at all, yet the surface shows plainly that it was. Traces of white. Height, 5.5 cm. Red clay.

185. Similar figure with supports behind. She wears stephane and necklace with pendant (these made in the mould), and long veil falling to shoulders (a separate piece added after the figure was complete). Traces of white; three red lines on bottom of chiton. Height, 10.5 cm. Reddish yellow clay.

186. Third figure of the same sort with arms bent at elbows, and hands raised to shoulders. Traces of white. Height, 8 cm. Light yellow clay.

187. (Fig. 68.) Seated figure, very summary modeling — only feet, hands, and features brought out at all. The figure rests on a high plinth, which was moulded with it. The hair is a simple band above forehead. She wears a stephane, from which a veil falls over shoulders. Solid, pierced only by air-vent. Traces of white. Height, 8 cm. Dark red clay.



Fig. 68.

188. (Plate XLVI. 12.) Replica of No. 187, only that plinth was made lower. Traces of white, of red on lower part of chiton. Height, 7 cm. Dark red clay.

189. Similar figure, but not from same mould. Modeling very summary. Traces of white. Height, 6.5 cm. Red clay.

190. Similar figure, but with high polos instead of stephane. Traces of red. Height, 8 cm. Red clay.

191. Similar figure, seated on wide chair (broken at waist). Here, also, the veil covers the hair and falls to shoulders; cf. No. 187). White slip. Height, 6 cm. Red clay.

For all these carelessly modeled figures, cf. Heuzey, *Fig. Ant.* pl. xi.; Perrot et Chipiez, *Hist. de l'Art*, III. p. 425, fig. 299; Kekulé, *Ant. Terrakotten*, II. p. 9, fig. 3; Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 227 ff.; Panofka, *Terrakotten des K. Mus. zu Berlin*, p. 12, pl. ii.

192. (Fig. 69.) Hastily modeled seated figure, wrapped in flowing chiton, under which, however, the outlines of arms, hands, and breasts are carefully brought out. The figure is pierced by an air-vent. Traces of white. Height, 7.5 cm. Reddish yellow clay.



Fig. 69.

Cf. Gerhard, *Ant. Bild.* pp. 338 ff., pl. xcv. 1, 2 (Sicily); also in stone, the seated figures, discovered at Branchidae by Newton (*Discoveries at Halicarnassus*, pp. 530 ff., pls. lxxiv., lxxv.), and the archaic statue in the National Museum at Athens (Kavvadias, No. 6; Ἐφ. Ἀρχ. 1874, p. 480, pl. lxxi. Αα and Αβ).

193. Four fragments of similar figures, not, however, from the same mould. Slight traces of white; some red on chairs, feet, and chitons. Clay, yellow and red.

194. Similar figure showing an attempt at reproducing the folds of the chiton where it falls across the breast. Arms still at sides, hands resting on knees. Fragments of two supports at back. White slip with red lines on arms and breast. Height, 6 cm. Yellow clay.

195. Two similar figures, not from same mould. Traces of white; one figure has red lines (criss-cross pattern) on breast and above knees. Height, 6 cm. and 7.5 cm. Clay, yellow.

196. Lower part of large seated figure on high plinth, with considerable treatment of the folds at sides and between legs. Traces of white. Height, 7.5 cm. Dark red clay.

197. (Plate XLVI. 16.) Figure similar to No. 192, but with much better treatment of folds across breast and at waist. The outlines of the legs are also well brought out. The hands rest on arms of chair, and both hold round objects (probably apples; cf. Nos. 172, 173, and p. 15). The figure is pierced by an air-vent. Traces of white. Height, 7 cm. Dark red clay.

198. (Plate XLVI. 13.) Similar figure, with careful, though stylistic representation of folds by deep vertical lines, from breast to feet. Hands at knees; fingers rudely indicated. The figure has an air-vent. Red line at neck. Height, 6.5 cm. Clay, light yellow and very fine.

199. (Plate XLVI. 15.) Similar figure without indication of folds, but with right hand raised, holding a bird to breast. Left hand rests on left knee. The throne on which she sits is carefully distinguished. Traces of red on chair. Height, 6 cm. Clay, light yellow and very fine.

Cf. Nos. 166–171; Kekulé, *Ant. Terrakotten*, II. p. 10, fig. 10, p. 11, fig. 13; also figures in Case VI., large terra-cotta room, Syracuse.

200. Fragments of five replicas of No. 199, all solid. Traces of white, with red on chair. Fine, light yellow clay.

201. (Fig 70.) Hastily modeled figure of a child, broken at waist. On her right arm she holds a small doll. Traces of white. Height, 5.5 cm. Red clay.



Fig. 70.

202. Thirteen small heads belonging to the type of Nos. 198 and 199. They are flat at back, of pronounced archaic style. The hair is usually a mass falling to shoulders, slightly notched over forehead, with polos or stephane. General traces of white. Heights, 2.5 cm. to 5 cm. Clay, fine, ranging from yellow to red.

203. Three very similar heads, not, however, flat at back. The features are archaic. Hair, mass. One head has the polos. Traces of white, of red on polos. Heights, 3 cm., 3.5 cm., and 4 cm. Clay, light yellow to red.

204. Lower part of crouching male figure with hands (disproportionately large) on knees. The figure corresponds very closely to one from Megara Hyblaea (cf. *Mon. Ant.* I. pl. vi. 5), and was undoubtedly a satyr or silenus. Traces of white. Height, 6 cm. Reddish yellow clay.

205. Lower part of squatting figure, probably a satyr, broken at waist. Hands rest on knees. Traces of white, sporadic bits of red. Height, 4.5 cm. Light yellow clay.

There is a similar figure in Syracuse, large terra-cotta room, Case III., from Megara Hyblaea.

206. Rude seated Pan — hollow figure, which probably served as a vase. Modeling very flat, only face, arms, and syrinx brought out. Slight traces of white. Height, 8.5 cm. Reddish yellow clay.

207. Head of archaic type, hollow, with vase orifice at the top. The hair seems to be held close to the skull by a veil. Traces of white. Height, 7.5 cm. Red clay.

208. (Plate XLVII. 13.) Very similar head, also with orifice at top, and casque-like hair-covering. Traces of white. Height, 6.5 cm. Red clay.

209. Eight fragments of similar heads, badly broken. General traces of white. Yellow clay, shading to red.

These heads (Nos. 207–209) have the marks of the Rhodian ware as described by Heuzey (*Cat. des Fig. du Mus. du Louvre*, p. 220), "la mâchoire inférieure osseuse et développée à l'excès, ce que nous appelons le *menton galoche;* de gros yeux triangulaires, dont la paupière supérieure est seule arquée." They are probably, therefore, imported, although a few may be local imitations. Cf. Heuzey, *loc. cit.* pp. 229, 230; Kekulé, *Ant. Terrakotten*, II. p. 12, fig. 16, and p. 18, fig. 34; Winter, *Arch. Anz.* 1893, p. 147, No. 28; Orsi, 'Megara Hyblaea,' *Mon. Ant.* I. p. 805.

210. (Plate XLVII. 15.) Head of pronounced archaic type — eyes set obliquely to nose, mouth raised at corners. The headdress is very high, a sort of tiara (the kydaris?), and from it a veil falls to the shoulders. Traces of white. Height, 7.5 cm. Clay, light yellow.

211. Three very similar heads, all with same headdress and veil. Slight traces of white. Heights, 5.5 cm., 5.5 cm., and 7 cm. Yellow clay.

These heads (Nos. 210 and 211) again resemble very closely a Rhodian type (cf. Heuzey, *Fig. du Mus. du Louvre*, pl. xi. 2), which is found pretty generally distributed in the basin of the Mediterranean — in Greece, in Sicily, in Italy, and even in Phoenicia.[1] Yet they show some divergences, for instance, the eyes are not set quite so obliquely as those of the Rhodian figures, and they are not so narrow; so that they are probably of local manufacture, imitating Rhodian work, like the Syracusan figures mentioned by Heuzey.[2]

212. (Plate XLVII. 14.) Archaic head, with elaborate treatment of the hair. This consists of two rows of curls over the forehead, moulded in the form, then a row of elaborate applied spiral curls, with eight curls at the back (now broken), the whole topped by a double, twisted taenia. The eyes are wide and very long, nose in two planes, mouth straight, ending in a pad of flesh at each corner; a deep furrow extends from cheek-bone to chin on each side of nose. Traces of white. Height, 5 cm. Yellow clay.

213. (Plate XLVII. 12.) Large archaic head, very similar to No. 212. Same type of face. The hair here consisted of a row of scallops moulded in the form, with a row of applied curls above and large mass behind. The figure had large earrings, now broken. Traces of white. Height, 8.5 cm. Light yellow clay.

These two heads (Nos. 212 and 213) differ greatly from the Argive type. Their nearest

[1] Cf. Heuzey, *Cat. des Fig. du Mus. du Louvre*, p. 240.

[2] *Ibid.* p. 227, n. 3.

187. (Fig. 68.) Seated figure, very summary modeling — only feet, hands, and features brought out at all. The figure rests on a high plinth, which was moulded with it. The hair is a simple band above forehead. She wears a stephane, from which a veil falls over shoulders. Solid, pierced only by air-vent. Traces of white. Height, 8 cm. Dark red clay.



Fig. 68.

188. (Plate XLVI. 12.) Replica of No. 187, only that plinth was made lower. Traces of white, of red on lower part of chiton. Height, 7 cm. Dark red clay.

189. Similar figure, but not from same mould. Modeling very summary. Traces of white. Height, 6.5 cm. Red clay.

190. Similar figure, but with high polos instead of stephane. Traces of red. Height, 8 cm. Red clay.

191. Similar figure, seated on wide chair (broken at waist). Here, also, the veil covers the hair and falls to shoulders; cf. No. 187). White slip. Height, 6 cm. Red clay.

For all these carelessly modeled figures, cf. Heuzey, *Fig. Ant.* pl. xi.; Perrot et Chipiez, *Hist. de l'Art*, III. p. 425, fig. 299; Kekulé, *Ant. Terrakotten*, II. p. 9, fig. 3; Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 227 ff.; Panofka, *Terrakotten des K. Mus. zu Berlin*, p. 12, pl. ii.

192. (Fig. 69.) Hastily modeled seated figure, wrapped in flowing chiton, under which, however, the outlines of arms, hands, and breasts are carefully brought out. The figure is pierced by an air-vent. Traces of white. Height, 7.5 cm. Reddish yellow clay.



Fig. 69.

Cf. Gerhard, *Ant. Bild.* pp. 338 ff., pl. xcv. 1, 2 (Sicily); also in stone, the seated figures, discovered at Branchidae by Newton (*Discoveries at Halicarnassus*, pp. 530 ff., pls. lxxiv., lxxv.), and the archaic statue in the National Museum at Athens (Kavvadias, No. 6; Ἐφ. Ἀρχ. 1874, p. 480, pl. lxxi. Aα and Aβ).

193. Four fragments of similar figures, not, however, from the same mould. Slight traces of white; some red on chairs, feet, and chitons. Clay, yellow and red.

194. Similar figure showing an attempt at reproducing the folds of the chiton where it falls across the breast. Arms still at sides, hands resting on knees. Fragments of two supports at back. White slip with red lines on arms and breast. Height, 6 cm. Yellow clay.

195. Two similar figures, not from same mould. Traces of white; one figure has red lines (criss-cross pattern) on breast and above knees. Height, 6 cm. and 7.5 cm. Clay, yellow.

196. Lower part of large seated figure on high plinth, with considerable treatment of the folds at sides and between legs. Traces of white. Height, 7.5 cm. Dark red clay.

197. (Plate XLVI. 16.) Figure similar to No. 192, but with much better treatment of folds across breast and at waist. The outlines of the legs are also well brought out. The hands rest on arms of chair, and both hold round objects (probably apples: cf. Nos. 172, 173, and p. 15). The figure is pierced by an air-vent. Traces of white. Height, 7 cm. Dark red clay.

198. (Plate XLVI. 13.) Similar figure, with careful, though stylistic representation of folds by deep vertical lines, from breast to feet. Hands at knees; fingers rudely indicated. The figure has an air-vent. Red line at neck. Height, 6.5 cm. Clay, light yellow and very fine.

199. (Plate XLVI. 15.) Similar figure without indication of folds, but with right hand raised, holding a bird to breast. Left hand rests on left knee. The throne on which she sits is carefully distinguished. Traces of red on chair. Height, 6 cm. Clay, light yellow and very fine.

Cf. Nos. 166–171; Kekulé, *Ant. Terrakotten*, II. p. 10, fig. 10, p. 11, fig. 13; also figures in Case VI., large terra-cotta room, Syracuse.

200. Fragments of five replicas of No. 199, all solid. Traces of white, with red on chair. Fine, light yellow clay.

201. (Fig 70.) Hastily modeled figure of a child, broken at waist. On her right arm she holds a small doll. Traces of white. Height, 5.5 cm. Red clay.



Fig. 70.

202. Thirteen small heads belonging to the type of Nos. 198 and 199. They are flat at back, of pronounced archaic style. The hair is usually a mass falling to shoulders, slightly notched over forehead, with polos or stephane. General traces of white. Heights, 2.5 cm. to 5 cm. Clay, fine, ranging from yellow to red.

203. Three very similar heads, not, however, flat at back. The features are archaic. Hair, mass. One head has the polos. Traces of white, of red on polos. Heights, 3 cm., 3.5 cm., and 4 cm. Clay, light yellow to red.

204. Lower part of crouching male figure with hands (disproportionately large) on knees. The figure corresponds very closely to one from Megara Hyblaea (cf. *Mon. Ant.* I. pl. vi. 5), and was undoubtedly a satyr or silenus. Traces of white. Height, 6 cm. Reddish yellow clay.

205. Lower part of squatting figure, probably a satyr, broken at waist. Hands rest on knees. Traces of white, sporadic bits of red. Height, 4.5 cm. Light yellow clay.

There is a similar figure in Syracuse, large terra-cotta room, Case III., from Megara Hyblaea.

206. Rude seated Pan — hollow figure, which probably served as a vase. Modeling very flat, only face, arms, and syrinx brought out. Slight traces of white. Height, 8.5 cm. Reddish yellow clay.

207. Head of archaic type, hollow, with vase orifice at the top. The hair seems to be held close to the skull by a veil. Traces of white. Height, 7.5 cm. Red clay.

208. (Plate XLVII. 13.) Very similar head, also with orifice at top, and casque-like hair-covering. Traces of white. Height, 6.5 cm. Red clay.

209. Eight fragments of similar heads, badly broken. General traces of white. Yellow clay, shading to red.

These heads (Nos. 207–209) have the marks of the Rhodian ware as described by Heuzey (*Cat. des Fig. du Mus. du Louvre*, p. 220), "la mâchoire inférieure osseuse et développée à l'excès, ce que nous appelons le *menton guloche*: de gros yeux triangulaires, dont la paupière supérieure est seule arquée." They are probably, therefore, imported, although a few may be local imitations. Cf. Heuzey, *loc. cit.* pp. 229, 230; Kekulé, *Ant. Terrakotten*, II. p. 12, fig. 16, and p. 18, fig. 34; Winter, *Arch. Anz.* 1893, p. 147, No. 28; Orsi, 'Megara Hyblaea,' *Mon. Ant.* I. p. 805.

210. (Plate XLVII. 15.) Head of pronounced archaic type — eyes set obliquely to nose, mouth raised at corners. The headdress is very high, a sort of tiara (the kydaris?), and from it a veil falls to the shoulders. Traces of white. Height, 7.5 cm. Clay, light yellow.

211. Three very similar heads, all with same headdress and veil. Slight traces of white. Heights, 5.5 cm., 5.5 cm., and 7 cm. Yellow clay.

These heads (Nos. 210 and 211) again resemble very closely a Rhodian type (cf. Heuzey, *Fig. du Mus. du Louvre*, pl. xi. 2), which is found pretty generally distributed in the basin of the Mediterranean — in Greece, in Sicily, in Italy, and even in Phoenicia.[1] Yet they show some divergences, for instance, the eyes are not set quite so obliquely as those of the Rhodian figures, and they are not so narrow; so that they are probably of local manufacture, imitating Rhodian work, like the Syracusan figures mentioned by Heuzey.[2]

212. (Plate XLVII. 14.) Archaic head, with elaborate treatment of the hair. This consists of two rows of curls over the forehead, moulded in the form, then a row of elaborate applied spiral curls, with eight curls at the back (now broken), the whole topped by a double, twisted taenia. The eyes are wide and very long, nose in two planes, mouth straight, ending in a pad of flesh at each corner; a deep furrow extends from cheek-bone to chin on each side of nose. Traces of white. Height, 5 cm. Yellow clay.

213. (Plate XLVII. 12.) Large archaic head, very similar to No. 212. Same type of face. The hair here consisted of a row of scallops moulded in the form, with a row of applied curls above and large mass behind. The figure had large earrings, now broken. Traces of white. Height, 8.5 cm. Light yellow clay.

These two heads (Nos. 212 and 213) differ greatly from the Argive type. Their nearest

[1] Cf. Heuzey, *Cat. des Fig. du Mus. du Louvre*, p. 240.

[2] *Ibid.* p. 227, n. 3.

analogy in the Heraeum finds is the bronze bust, 5, pl. II. 1, 2; and in terra-cotta, the head published by Cesnola, *Coll. of Cypriote Ant.* II² pl. xv. No. 117 (cf. the sculptures, *ibid.* I² pl. xciii. Nos. 622 and 623; pl. xcvii. Nos. 662 and 663). We are inclined, therefore, to regard these two heads as imported.

214. (Plate XLVII. 4.) Head of archaic style, with very sharp features. The hair is an applied mass at back, marked with notches and bound with a taenia. The ground color is greenish yellow, to which red was applied on eyes, cheeks, and brows. Hair, red, shading to black. Height, 4.5 cm. Yellow clay.

215. Small, very rude bearded masque, slightly chipped at sides. Eyes and mouth marked by wide grooves, beard by coarse vertical lines. No trace of color. Height, 5 cm. Red clay.

216. (Plate XLVII. 8.) Archaic female masque, original edge all around. The hair is moulded in masses. Hole for suspension above forehead. Traces of white. Height, 5.5 cm. Light yellow clay.

217. Large votive head, broken at right side and at neck. The hair is a row of round bosses, surmounted by stephane with suspension hole. Modeling superficial. Traces of white. Height, 9 cm. Dark red clay.

218. Very similar head, almost replica, broken at neck, left side of face chipped away. Traces of white. Height, 7 cm. Clay, dark red.

219. Right side of large votive head, with treatment of hair in four lines of zigzags. Narrow stephane. Traces of white. Height, 6 cm. Dark yellow clay.

220. Similar fragment, with large round earring. Hair modeled as a mass, topped by stephane. Traces of white. Height, 8.5 cm. Light yellow clay.

221. (Plate XLVII. 9.) Similar masque with stephane. The hair is treated as short curls. Hole for suspension in front of stephane. Traces of white. Height, 5.5 cm. Red clay.

222. (Plate XLVII. 6.) Small masque with very high stephane, broken at neck. Hair, a line of notches above forehead. Customary hole for suspension. No trace of color. Height, 4 cm. Light yellow clay.

223. Three replicas of No. 222, same clay.

224. Small bust of hasty workmanship, original edge preserved all around. The hair is a simple mass. Hole for suspension. No trace of color. Height, 8 cm. Greenish yellow clay.

225. (Plate XLVII. 10.) Archaic masque in high stephane, broken only at upper right hand corner. The hair is treated in two rows of loops. Traces of white. Height, 6.5 cm. Clay, straw.

226. Eight fragments of archaic masques, similar to Nos. 221–225, both with and without stephane. The suspension hole is common. General traces of white. Yellow clay.

VIII. ADVANCED ARCHAIC.

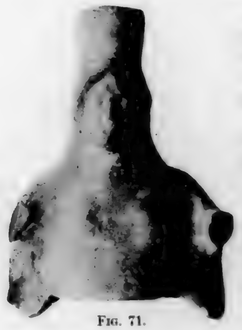


Fig. 71.

227. (Fig. 71.) Upper part of standing figure with high stephane (broken at waist). Hair, a simple roll below stephane. At the shoulders were two projections (now broken off), which doubtless served to suspend the figure. Some traces of white coat. Height, 9.5 cm. Reddish yellow clay.

228. Very similar smaller figure, broken at waist. This figure also has stephane and projections at shoulders. Two strands of hair fall in front of left shoulder, one in front of right. Traces of white. Height, 6 cm. Yellow clay.

229. Lower part of seated figure with hands on knees. The figure is hollow, like the later terra-cottas of free style. The folds of the chiton, however, are still represented in a stiff, archaic fashion. The color is well preserved — white slip, with traces of applied red. Height, 5 cm. Clay, reddish yellow.

230. (Plate XLVII. 11.) Votive head, hair treated in waves above forehead, and in notches at sides. Stephane, pierced by suspension hole. Traces of white. Height, 5.5 cm. Dark red clay.

231. Three exact replicas of the preceding, same traces of color; same clay.

232. Seven heads similar to No. 230, but not replicas. Same treatment of hair; stephane with hole for suspension. General traces of white. Height, 4 cm. to 5 cm. Clay, light yellow to red.

233. Twenty-three fragments of similar advanced archaic heads, much mutilated, but probably all votive heads. General trace of white. Clay, usually red; one or two specimens are of yellow clay.



Fig. 72.

234. (Fig. 72.) Head of advanced archaic style, solid. Hair treated as a simple mass. Traces of white. Height, 3.5 cm. Light yellow clay.

235. (Plate XLVII. 1.) Similar head, solid. Hair, mass. Traces of white. Height, 4.5 cm. Clay, light yellow.

236. (Plate XLVII. 2.) Similar head, solid. Hair, mass, but treated in waves over forehead. Traces of white, of red on hair. Height, 4.5 cm. Dark yellow clay.



Fig. 73.

237. (Plate XLVII. 5.) Similar head, solid. High coiffure, treated as a mass. Traces of white. Height, 4 cm. Dark red clay.

238. (Fig. 73.) Head of similar style. Hair, wavy curls over forehead, and at sides of neck; mass at back under veil. Traces of white. Height, 6 cm. Clay, reddish yellow.

IX. FREE STYLE.

239. (Plate XLVII. 7.) Fragment of large votive head, broken at left side. The whole treatment is in large surfaces, free from archaic restraint; the mouth has the natural curve, the outlines of the eye are correctly given, even to the lapping of the upper lid over the under. A ridge down the middle of the face seems to show that the head was made in two pieces. Traces of white. Height, 8.5 cm. Red clay.

This head, in spite of its fragmentary condition, seems to us to represent the great style of the fifth century, and has inherent traces of the influence of some large statue. The peculiar marking of the hair, undercut and thus relieved from the face, and falling on either side in a mass of curls (here boldly sketched, though not elaborately modeled), is closely analogous to the Argive coin in which a copy of the Polycleitan Hera has been identified. It also suggests a comparison with the newly identified marble head in the British Museum (see General Introd. to Sculpture, p. 23). We are thus encouraged to consider this terra-cotta head as immediately related to the great Polycleitan Hera. Cf. Waldstein, 'The Argive Hera of Polycleitus,' J. H. S. XXI. (1901), pp. 30 ff., especially pp. 43, 44, and fig. 2.



Fig. 74.

240. (Fig. 74.) Votive bust, broken at neck, but with original edge at waist. The folds of the chiton and of the long veil which falls over the shoulders and the arms are all given with perfect freedom and naturalness. The figure is covered with a white coat. Height, 9 cm. Clay, reddish yellow.

X. ANIMALS.

241. (Plate XLVIII. 7 and Fig. 75.) Group, representing a bull attacked by a lion. The lion grasps the bull around the shoulders and bites him in the neck. The bull is plainly exhausted; his head sinks to one side, and one of his hind legs is curled up under him, while the other is stretched straight out behind, as in the well-known Acropolis group. The execution of the group is fair — the anatomy of the bull's head is quite well given, and the muscles are fairly well brought out. The fore legs of the lion are too long, otherwise he is well modeled; his mane is formed of a number of round disks, close together. Technically, it may be noted that the bull seems to have been made complete (his tail curls over his back), and the lion was then "applied," so to speak, to him. White slip; black lines on forehead of bull and front legs of lion; red

analogy in the Heraeum finds is the bronze bust, 5, pl. II. 1, 2; and in terra-cotta, the head published by Cesnola, *Coll. of Cypriote Ant.* II[1] pl. xv. No. 117 (cf. the sculptures, *ibid.* I[2] pl. xciii. Nos. 622 and 623; pl. xcvii. Nos. 662 and 663). We are inclined, therefore, to regard these two heads as imported.

214. (Plate XLVII. 4.) Head of archaic style, with very sharp features. The hair is an applied mass at back, marked with notches and bound with a taenia. The ground color is greenish yellow, to which red was applied on eyes, cheeks, and brows. Hair, red, shading to black. Height, 4.5 cm. Yellow clay.

215. Small, very rude bearded masque, slightly chipped at sides. Eyes and mouth marked by wide grooves, beard by coarse vertical lines. No trace of color. Height, 5 cm. Red clay.

216. (Plate XLVII. 8.) Archaic female masque, original edge all around. The hair is moulded in masses. Hole for suspension above forehead. Traces of white. Height, 5.5 cm. Light yellow clay.

217. Large votive head, broken at right side and at neck. The hair is a row of round bosses, surmounted by stephane with suspension hole. Modeling superficial. Traces of white. Height, 9 cm. Dark red clay.

218. Very similar head, almost replica, broken at neck, left side of face chipped away. Traces of white. Height, 7 cm. Clay, dark red.

219. Right side of large votive head, with treatment of hair in four lines of zigzags. Narrow stephane. Traces of white. Height, 6 cm. Dark yellow clay.

220. Similar fragment, with large round earring. Hair modeled as a mass, topped by stephane. Traces of white. Height, 8.5 cm. Light yellow clay.

221. (Plate XLVII. 9.) Similar masque with stephane. The hair is treated as short curls. Hole for suspension in front of stephane. Traces of white. Height, 5.5 cm. Red clay.

222. (Plate XLVII. 6.) Small masque with very high stephane, broken at neck. Hair, a line of notches above forehead. Customary hole for suspension. No trace of color. Height, 4 cm. Light yellow clay.

223. Three replicas of No. 222, same clay.

224. Small bust of hasty workmanship, original edge preserved all around. The hair is a simple mass. Hole for suspension. No trace of color. Height, 8 cm. Greenish yellow clay.

225. (Plate XLVII. 10.) Archaic masque in high stephane, broken only at upper right hand corner. The hair is treated in two rows of loops. Traces of white. Height, 6.5 cm. Clay, straw.

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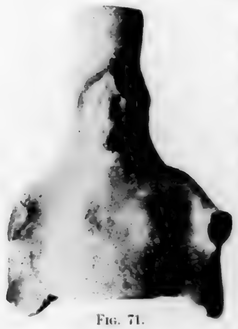


Fig. 71.

227. (Fig. 71.) Upper part of standing figure with high stephane (broken at waist). Hair, a simple roll below stephane. At the shoulders were two projections (now broken off), which doubtless served to suspend the figure. Some traces of white coat. Height, 9.5 cm. Reddish yellow clay.

228. Very similar smaller figure, broken at waist. This figure also has stephane and projections at shoulders. Two strands of hair fall in front of left shoulder, one in front of right. Traces of white. Height, 6 cm. Yellow clay.

229. Lower part of seated figure with hands on knees. The figure is hollow, like the later terra-cottas of free style. The folds of the chiton, however, are still represented in a stiff, archaic fashion. The color is well preserved — white slip, with traces of applied red. Height, 5 cm. Clay, reddish yellow.

230. (Plate XLVII. 11.) Votive head, hair treated in waves above forehead, and in notches at sides. Stephane, pierced by suspension hole. Traces of white. Height, 5.5 cm. Dark red clay.

231. Three exact replicas of the preceding, same traces of color; same clay.

232. Seven heads similar to No. 230, but not replicas. Same treatment of hair: stephane with hole for suspension. General traces of white. Height, 4 cm. to 5 cm. Clay, light yellow to red.

233. Twenty-three fragments of similar advanced archaic heads, much mutilated, but probably all votive heads. General trace of white. Clay, usually red; one or two specimens are of yellow clay.



Fig. 72.

234. (Fig. 72.) Head of advanced archaic style, solid. Hair treated as a simple mass. Traces of white. Height, 3.5 cm. Light yellow clay.

235. (Plate XLVII. 1.) Similar head, solid. Hair, mass. Traces of white. Height, 4.5 cm. Clay, light yellow.

236. (Plate XLVII. 2.) Similar head, solid. Hair, mass, but treated in waves over forehead. Traces of white, of red on hair. Height, 4.5 cm. Dark yellow clay.

237. (Plate XLVII. 5.) Similar head, solid. High coiffure, treated as a mass. Traces of white. Height, 4 cm. Dark red clay.



Fig. 73.

238. (Fig. 73.) Head of similar style. Hair, wavy curls over forehead, and at sides of neck; mass at back under veil. Traces of white. Height, 6 cm. Clay, reddish yellow.

IX. FREE STYLE.

239. (Plate XLVII. 7.) Fragment of large votive head, broken at left side. The whole treatment is in large surfaces, free from archaic restraint; the mouth has the natural curve, the outlines of the eye are correctly given, even to the lapping of the upper lid over the under. A ridge down the middle of the face seems to show that the head was made in two pieces. Traces of white. Height, 8.5 cm. Red clay.

This head, in spite of its fragmentary condition, seems to us to represent the great style of the fifth century, and has inherent traces of the influence of some large statue. The peculiar marking of the hair, undercut and thus relieved from the face, and falling on either side in a mass of curls (here boldly sketched, though not elaborately modeled), is closely analogous to the Argive coin in which a copy of the Polycleitan Hera has been identified. It also suggests a comparison with the newly identified marble head in the British Museum (see General Introd. to Sculpture, p. 23). We are thus encouraged to consider this terra-cotta head as immediately related to the great Polycleitan Hera. Cf. Waldstein, 'The Argive Hera of Polycleitus,' J. H. S. XXI. (1901), pp. 30 ff., especially pp. 43, 44, and fig. 2.

Fig. 74.

240. (Fig. 74.) Votive bust, broken at neck, but with original edge at waist. The folds of the chiton and of the long veil which falls over the shoulders and the arms are all given with perfect freedom and naturalness. The figure is covered with a white coat. Height, 9 cm. Clay, reddish yellow.

X. ANIMALS.

241. (Plate XLVIII. 7 and Fig. 75.) Group, representing a bull attacked by a lion. The lion grasps the bull around the shoulders and bites him in the neck. The bull is plainly exhausted; his head sinks to one side, and one of his hind legs is curled up under him, while the other is stretched straight out behind, as in the well-known Acropolis group. The execution of the group is fair — the anatomy of the bull's head is quite well given, and the muscles are fairly well brought out. The fore legs of the lion are too long, otherwise he is well modeled; his mane is formed of a number of round disks, close together. Technically, it may be noted that the bull seems to have been made complete (his tail curls over his back), and the lion was then "applied," so to speak, to him. White slip; black lines on forehead of bull and front legs of lion; red

streak at lion's mouth, extending across the bull's neck (probably a representation of blood). Length, 10 cm. Height, 5 cm. Clay, light yellow.

The motive of a bull attacked by one or more lions is one of the oldest, and one of the commonest in Greek art. In Mycenaean times, we find representations of this subject on gems (cf. Tsountas, Ἐφ. Ἀρχ. 1888, p. 177, No. 25, pl. x.; *ibid.* 1889, p. 166, No. 18, pl. x.; Perrot et Chipiez, *Hist. de l'Art*, VI. p. 771, pl. xvi. 21); and on an ivory plaque from Sparta (*B. C. H.* II. [1878], p. 213, pl. xvi. 4). In archaic art it is very common; cf. for example, the frieze of the temple of Assos (Clarac, *Musée de Sculpture*, II. pl. cxvi. B, No. 5); the Lycian relief (Clarac, *op. cit.* II. pl. ccxxiii. No. 189); the relief from Marsala (*Arch. Zeit.* 1872, pp. 133, 134, pl. li.); group from Myra (Fellows, *Discoveries in Lycia*, p. 197); relief from Xanthus (*ibid.* p. 174); frieze from Aezani (Le Bas et Waddington, *Voyage Archéologique en Grèce et en Asie Mineure*, atlas, under 'Asie Mineure,' pl. xiv.); and especially the Acropolis group (*B. C. H.* XIII. [1889], p. 139, and *Rev. Arch.* XVIII. [1891], p. 137, pl. xiv. bis.). The motive is also common in branches other than sculpture in stone; cf. the shield from Amathus published by Cesnola (*Cyprus*, pl. xx.); the tripod from Vulci (Braun, *Annali*, 1842, pp. 62 ff.; *Mon.* III. pl. xliii.); and the oenochoe (Gerhard, *Aus. Vas.* II. p. 134, pls. cxxii., cxxiii). In terra-cotta, I know of no examples except two reliefs — one in Berlin (Gerhard, *Ant. Bild.* p. 317, pl. lxxviii. 2), the other in Palermo (Kekulé, *Ant. Terrakotten*, II. p. 82, pl. liv. 2).

Of all these groups, the Acropolis one approaches most nearly to ours. In both, the bull is plainly exhausted and overcome; the hind legs even have the same position in both — that of the "split," and the decoration in red stripes is common to both. In fact, it seems probable that our group was copied from a work of sculpture similar to the Acropolis group, and dates from about the same time, i. e., the first half of the sixth century B. C.

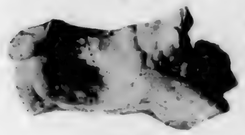


Fig. 75.

242. (Plate XLVIII. 11.) Fragment of a centaur, top of head, legs, and horse's body missing. The break at buttocks shows plainly that the figure was a centaur. He has a long, pointed beard, in which a triangular hole marks the mouth. The left hand is pressed against the left hip; the right was apparently raised. White slip. Height, 6.5 cm. Light yellow clay.

Cf. the figure from Limniti, *Arch. Anz.* 1889, p. 88, E.

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244. (Plate XLVIII. 2.) Mounted warrior of the ordinary primitive type. Face, a beak, with disks for eyes; high helmet. He has no shield, but extends his arms to the sides of the horse's head. Traces of white. Height, 7.5 cm. Red clay.

245. (Plate XLVIII. 4.) Similar warrior, with large shield on left arm. Only neck and shoulders of horse are preserved. Traces of white. Height, 9 cm. Red clay.

246. (Plate XLVIII. 3.) Similar warrior, no part of horse preserved. The warrior wears a peculiar helmet, the effect of which resembles that of the American "cocked hat." White slip. Height, 7 cm. Light yellow clay.

247. Forty-five fragments of similar figures, all more or less broken. They usually show traces of a white slip. Clay, usually red.

For this very common type, cf. Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 602, 603 (from Tegea); Jamot, *B. C. H.* XIV. (1890), pp. 217 ff. (Tanagra figures); Cesnola, *Coll. of Cypriote Antiquities*, III. pl. lxix.

248. (Plate XLVIII. 8.) Horse with pannier on each side, bound by straps which pass around neck, under belly, and under tail. Ornamented with black lines across breast, black dots on straps. Length, 7.5 cm. Yellow clay.

Cf. the horse with a basket on his back found at the sanctuary of the Kabiri (Wolters, *Ath. Mitt.* XV. [1890], p. 358).

249. (Plate XLVIII. 10.) Horse's head of good style. The forelock is carefully brought out, and even the wrinkles over the eyes. Traces of white. Height, 5 cm. Clay, light yellow and fine.

250. (Plate XLVIII. 12.) Small animal (dog?), legs broken. The eyes are holes bordered by raised rims. Traces of white. Height, 3.5 cm. Yellow clay.

251. (Plate XLVIII. 1.) Bull's head of good style, complete except right horn. Traces of white. Height, 6.5 cm. Clay, red.

252. (Plate XLVIII. 5.) Similar head, horns broken. Traces of white. Height, 6.5 cm. Clay, red.

253. (Plate XLVIII. 17.) Bull's head in profile, good workmanship. Traces of white. Height, 5.5 cm. Dark yellow clay.

Cf. the large finds of similar bulls at the sanctuary of the Kabiri (Wolters, *Ath. Mitt.* XV. [1890], pp. 355 ff.).

254. (Plate XLVIII. 24.) Serpent's head of good style. Body, black; head, green, bordered by maroon line; eyes and nose touched up with black. Length, 5.5 cm. Yellow clay.

255. (Plate XLVIII. 9.) Small dove with young under her wings. Traces of red. Height, 2.5 cm. Red clay.

256. (Plate XLVIII. 23.) Cock, practically unbroken. White slip, traces of red on comb and wattles. Height, 7 cm. Yellow clay.

257. (Plate XLVIII. 14.) Small human-headed bird, with ring for suspension. The face is archaic, with high coiffure, two braids falling over right shoulder and one over left; mass at back. Traces of white with applied red. Height, 5 cm. Dark yellow clay.

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258. (Fig. 76.) Cock, broken at neck. The background is cut away all around, and the plaque is pierced by two holes for suspending it or for fixing it upon a background. Traces of white. Height, 5.5 cm. Dark red clay.



Fig. 76.

This type is very common. Cf. Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 11–13; Dumont et Chaplain, *Céramiques de la Grèce Propre*, II. p. 229, No. 45; Girard, 'Sur Quelques Nécropoles de la Grèce du Nord,' *B. C. H.* III. (1879), p. 217, No. 2; Stephani, *Compte Rendu*, 1868, p. 71, pl. iii. 14; Rayet, *Cat. de la Coll. d'Ant. Gr. de M. O. Rayet*, p. 8, No. 30; there are similar specimens in Syracuse.

259. (Plate XLVIII. 19.) Dog's head, broken at neck, which is decorated with a twisted collar. The modeling is very careless. Traces of white. Height, 6 cm. Clay, red.

260. (Plate XLVIII. 18.) Rude ram's head, broken at neck. Traces of red. Height, 5 cm. Light yellow clay.

Cf. Schliemann, *Tiryns*, p. 106, fig. 22.

261. Bear's head, broken at neck, very rude eye and mouth marked by long grooves. Traces of red. Height, 5 cm. Gray clay.

262. (Plate XLVIII. 15.) Head of griffin, broken at neck. The mouth is wide open. The hair is represented by notches above the forehead and at sides of neck. Traces of white. Height, 6 cm. Red clay.

263. (Plate XLVIII. 20.) Squatting pig, fore legs (which were extended horizontally) broken. No trace of color. Height, 6 cm. Dark red clay.

streak at lion's mouth, extending across the bull's neck (probably a representation of blood). Length, 10 cm. Height, 5 cm. Clay, light yellow.

The motive of a bull attacked by one or more lions is one of the oldest, and one of the commonest in Greek art. In Mycenaean times, we find representations of this subject on gems (cf. Tsountas, Ἐφ. Ἀρχ. 1888, p. 177, No. 25, pl. x.; *ibid.* 1889, p. 166, No. 18, pl. x.; Perrot et Chipiez, *Hist. de l'Art*, VI. p. 771, pl. xvi. 21); and on an ivory plaque from Sparta (*B. C. H.* II. [1878], p. 213, pl. xvi. 4). In archaic art it is very common; cf. for example, the frieze of the temple of Assos (Clarac, *Musée de Sculpture*, II. pl. cxvi. B, No. 5); the Lycian relief (Clarac, *op. cit.* II. pl. cexxiii. No. 189); the relief from Marsala (*Arch. Zeit.* 1872. pp. 133, 134, pl. li.); group from Myra (Fellows, *Discoveries in Lycia*, p. 197); relief from Xanthus (*ibid.* p. 174); frieze from Aezani (Le Bas et Waddington, *Voyage Archéologique en Grèce et en Asie Mineure*, atlas, under 'Asie Mineure,' pl. xiv.); and especially the Acropolis group (*B. C. H.* XIII. [1889], p. 139, and *Rev. Arch.* XVIII. [1891], p. 137, pl. xiv. bis.). The motive is also common in branches other than sculpture in stone; cf. the shield from Amathus published by Cesnola (*Cyprus*, pl. xx.); the tripod from Vulci (Braun, *Annali*, 1842, pp. 62 ff.; *Mon.* III. pl. xliii.); and the oenochoe (Gerhard, *Aus. Vas.* II. p. 134, pls. cxxii., cxxiii). In terra-cotta, I know of no examples except two reliefs — one in Berlin (Gerhard, *Ant. Bild.* p. 317, pl. lxxviii. 2), the other in Palermo (Kekulé, *Ant. Terrakotten*, II. p. 82, pl. liv. 2).

Of all these groups, the Acropolis one approaches most nearly to ours. In both, the bull is plainly exhausted and overcome; the hind legs even have the same position in both — that of the "split," and the decoration in red stripes is common to both. In fact, it seems probable that our group was copied from a work of sculpture similar to the Acropolis group, and dates from about the same time, i. e., the first half of the sixth century B. C.

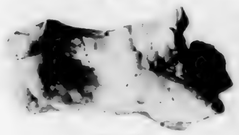


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264. (Plate XLVIII. 21.) Sitting monkey, arms broken. No trace of color. Height, 9.5 cm. Light yellow clay.

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265. (Plate XLVIII. 22.) Tortoise, head missing. Traces of white. Length, 4 cm. Dark red clay.

266. Six hundred and forty-six fragments of animals, similar to the types here described, all more or less mutilated.

XI. VARIOUS OBJECTS.

267. (Fig. 77.) Fragment of dish with cakes. Length, 6 cm. Clay, reddish yellow.



Fig. 77.

Undoubtedly an offering "by substitution" to the gods; cf. Pottier and Reinach, *La Nécropole de Myrina*, pp. 246 ff.



Fig. 78.

268. (Fig. 78.) Table, legs broken close to top. The edges are grooved to form an ornamental pattern. On the table, thin strips of clay, applied irregularly, seem to us to represent food (cf. No. 267). Traces of white and some red. Length. 7.5 cm. Yellow clay.

269. (Fig. 79.) Top of a table, legs broken. At each corner is a boss, meant, possibly, to represent a bronze nail-head. Top painted with cross-lines and round dots in maroon, shading to black. Length, 5.5 cm. Width, 5 cm. Yellow clay.



Fig. 79.

270. Forty-eight fragments of similar tables, mostly small, flat pieces of tops, with incised patterns of parallel and criss-cross lines. They are usually painted solid red, but a few have the regular white coat, with applied red and black lines. The largest fragment measures 7.5 cm. × 6 cm. Yellow clay.



Fig. 80.

271. (Fig. 80.) Fragment of bed, legs broken. The sides are covered with incised patterns: on one side, in the centre, meander, and at sides, criss-cross. No traces of color. Height, 3.5 cm. Length, 4.25 cm. Width, 2.75 cm. Yellow clay.



Fig. 81.

272. (Fig. 81.) Armchair, legs and back broken. The arm has a hole at the end (to receive a bronze nail-head?). Traces of a seated figure in the chair. Decoration in straight and zigzag lines, brown to black. Height, 5 cm. Length. 6 cm. Width, 4.5 cm. Light yellow clay.



Fig. 82.

Cf. Schliemann, *Tiryns*, p. 148, pl. xxiii. fig. c.; Furtwängler, *Samm. Sabouroff*, II. pl. cxliv. 3; *Mon. Ant.* VI. p. 107, pl. iv. 9; *ibid.* p. 129, pl. v. 10.

273. Similar armchair, containing fragment of a female figure of the seated, flat-bodied type, legs and back broken. One arm has a round boss at the end. Decoration in brown criss-cross lines on back of chair. The body of the woman was painted black. Height, 7 cm. Length, 6.75 cm. Width, 5 cm. Dark yellow clay.

Cf. No. 272.

274. (Fig. 82.) Leg from a similar chair or from a table, with ornamental nail-head, decorated by eight radiating grooves, with a boss at the centre. The end is painted red. Height, 4.5 cm. Clay, yellow.

275. Fifty-two fragments of similar legs, all decorated on the ends, usually with a boss or a rosette or radiating lines. They usually show traces of white or red color. Length, 2 cm. to 8 cm. Clay, yellow or red.



Fig. 83.

276. (Fig. 83.) Foot with sandal. The sole is a separate piece, and there is an elaborate bow on the instep. No trace of color. Length, 6 cm. Yellow clay.



Fig. 84.

277. (Fig. 84.) Terra-cotta mould. The objects represented come out more plainly in the impression (which is here given) than in the mould itself; but they are difficult to determine with certainty. Two are plainly shells, one seems to be a pear, another a fig, another a nut. Length, 4 cm. Width, 2.6 cm. Clay, yellow.



Fig. 85.

The objects represented in this mould make it appear probable that the mould was used for making offerings of food, "by substitution," to the goddess. Cf. No. 267, and the reference there given.

278. (Fig. 85.) Small set of three large-handled vases, set into one another. They served no practical purpose, but were simply a votive offering. Traces of white. Height, 6.25 cm. Dark red clay.

Orsi, in his article 'Megara Hyblaea' (*Mon. Ant.* I. p. 874), quotes a case of two stamni set into each other in a grave (No. cxciii. of his enumeration).

279. (Fig. 86.) Fragment of a bake-shop scene. All that is preserved is a portion of the long table, with two boards upon it, each carrying a cake of dough. On the base, beside this table, traces of three figures of primitive type. Traces of black. Height, 4.5 cm. Length, 10 cm. Width, 7.5 cm. Yellow clay.

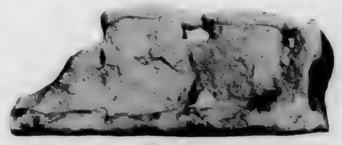


Fig. 86.



Fig. 87.

Cf. the bake-shop scenes in Athens, Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 39, 40, published by Kourouniotes, Ἐφ. Ἀρχ. 1896, pp. 201 ff., pl. xi.

280. (Fig. 87.) Small tree (?) with seven projections about main stalk (to represent branches?). White coat, ornamentation in red and black lines. Height, 7 cm. Clay, reddish yellow.

281. (Fig. 88.) Two flower-like disks, fastened together by the stems. One is painted solid red, the other has cross-lines in red, shading to black; stems, dark red. Length, 5 cm. Yellow clay.



Fig. 88.

282. Twenty-two fragments of similar disks. They are all painted, usually in maroon and black, sometimes in solid color. Length, 1.5 cm. to 5 cm. Yellow clay.

283. (Fig. 89.) Four-sided cone, perforated at the top. Ornament, a wide stripe in dark red to black, on each face. Height, 5 cm. Red clay.



Fig. 89.

Cf. p. 15, note 10.

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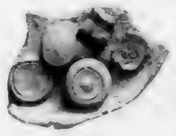


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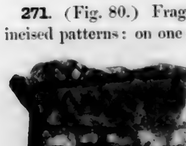


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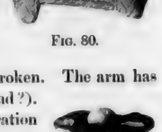


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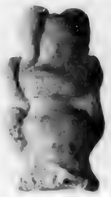


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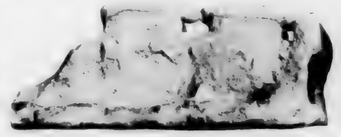


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279. (Fig. 86.) Fragment of a bake-shop scene. All that is preserved is a portion of the long table, with two boards upon it, each carrying a cake of dough. On the base, beside this table, traces of three figures of primitive type. Traces of black. Height, 4.5 cm. Length, 10 cm. Width, 7.5 cm. Yellow clay.



Fig. 87.

Cf. the bake-shop scenes in Athens, Martha, *Cat. des Fig. du Mus. d'Athènes*, Nos. 39, 40, published by Kourouniotes, Ἐφ. Ἀρχ. 1896, pp. 201 ff., pl. xi.

280. (Fig. 87.) Small tree (?) with seven projections about main stalk (to represent branches?). White coat, ornamentation in red and black lines. Height, 7 cm. Clay, reddish yellow.

281. (Fig. 88.) Two flower-like disks, fastened together by the stems. One is painted solid red, the other has cross-lines in red, shading to black; stems, dark red: Length, 5 cm. Yellow clay.



Fig. 88.

282. Twenty-two fragments of similar disks. They are all painted, usually in maroon and black, sometimes in solid color. Length, 1.5 cm. to 5 cm. Yellow clay.

283. (Fig. 89.) Four-sided cone, perforated at the top. Ornament, a wide stripe in dark red to black, on each face. Height, 5 cm. Red clay.



Fig. 89.

Cf. p. 15, note 10.

284. (Fig. 90.) Similar perforated cone; on each side, six horizontal lines. Color, light red, shading to dark red, brown, and black. Height, 7 cm. Yellow clay.



Fig. 90.

285. Thirty-one similar cones. Decoration is rare, and is never more than a simple scheme of line ornament. Height, 3.5 cm. to 6.5 cm. Clay, yellow to red.

286. (Fig. 91.) Large spool. On one face, a stamp, consisting of curved lines, radiating from a centre. Slight traces of red. Height, 4 cm. Diameter, 5 cm. Clay, greenish yellow.

287. (Fig. 92.) Similar spool. On one face, an animal (cat or dog), stamped in deep lines. Traces of white. Height, 5.5 cm. Diameter, 5.75 cm. Yellow clay.



Fig. 91.

288. Forty-nine similar spools, with simple designs, usually a single circle or simple rosette; two have a Greek cross. They almost never show traces of color. Heights, 3 cm. to 5 cm. Diameter, 3 cm. to 4.5 cm. Clay, light yellow to red.

289. One hundred and seventy-eight plain spools, sometimes rounded at the ends. Almost no traces of color. Heights, 2.25 cm. to 6 cm. Diameters, 2.25 cm. to 6 cm. Clay, light yellow to red.

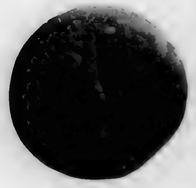


Fig. 92.

290. Large pear-shaped weight (probably loom-weight), perforated 4.5 cm. from top. The bottom, which is flattened, is pierced by three holes, apparently unconnected, and another hole, parallel to the axis, enters at the side. On one side, at bottom, is stamped an anthemion. No trace of color. Height, 14.5 cm. Greatest diameter, 7 cm. Dark yellow clay.

291. Twenty fragments of similar large weights, perforated at top, and with one to five holes at bottom, but without decoration. No traces of color. Height, 7.5 cm. to 13 cm. Clay, usually red.

292. Eight whorls of the ordinary type, all plain except one, which has four radiating grooves on one side. No decoration. Diameters, 2.75 cm. to 5 cm. Clay, yellow to red.

Cf. Schliemann, *Tiryns*, pp. 147 ff.; *Mycenae and Tiryns*, p. 77.

293. Three objects in the form of a Greek cross with rounded ends, pierced by a hole at the centre. No color. Lengths, 4.75 cm., 5.5 cm., 6.5 cm. Clay, red.

294. Four small rings with notched edges. They are painted red. Diameters, 2.75 cm. to 4 cm. Red clay.

Cf. Schliemann, *Tiryns*, p. 148, No. 73.

NOTE.

It is to be regretted that these pages were in type before the appearance of Hadaczek's two articles, 'Zur Schmuckkunst des altgriechischen Mittelalters' and 'Die Fibel des Odysseus, Helikes und Kalykes' (*Jahreshefte d. oester. arch. Inst. in Wien*, V. [1902], pp. 207 ff., and *ibid.* VI. [1903], pp. 108 ff.), so that it was impossible to give definite references to the Argive figures which he mentions. We are pleased to note that his conclusions as to the dress of these figures are substantially in agreement with our own, as expressed on pp. 10 ff. and *passim*.



TERRA COTTA FIGURINES. – PRIMITIVE AND TIRYNTHIAN ARGIVE TYPE: STANDING FIGURES

284. (Fig. 90.) Similar perforated cone; on each side, six horizontal lines. Color, light red, shading to dark red, brown, and black. Height, 7 cm. Yellow clay.



Fig. 90.

285. Thirty-one similar cones. Decoration is rare, and is never more than a simple scheme of line ornament. Height, 3.5 cm. to 6.5 cm. Clay, yellow to red.

286. (Fig. 91.) Large spool. On one face, a stamp, consisting of curved lines, radiating from a centre. Slight traces of red. Height, 4 cm. Diameter, 5 cm. Clay, greenish yellow.

287. (Fig. 92.) Similar spool. On one face, an animal (cat or dog), stamped in deep lines. Traces of white. Height, 5.5 cm. Diameter, 5.75 cm. Yellow clay.

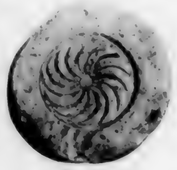


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TERRA COTTA FIGURINES. – PRIMITIVE AND TIRYNTHIAN ARGIVE TYPE: STANDING FIGURES



TERRA COTTA FIGURINES.—TIRYNTHIAN ARGIVE TYPE: SEATED FIGURES



TERRA COTTA FIGURINES.—ADVANCED ARGIVE TYPE



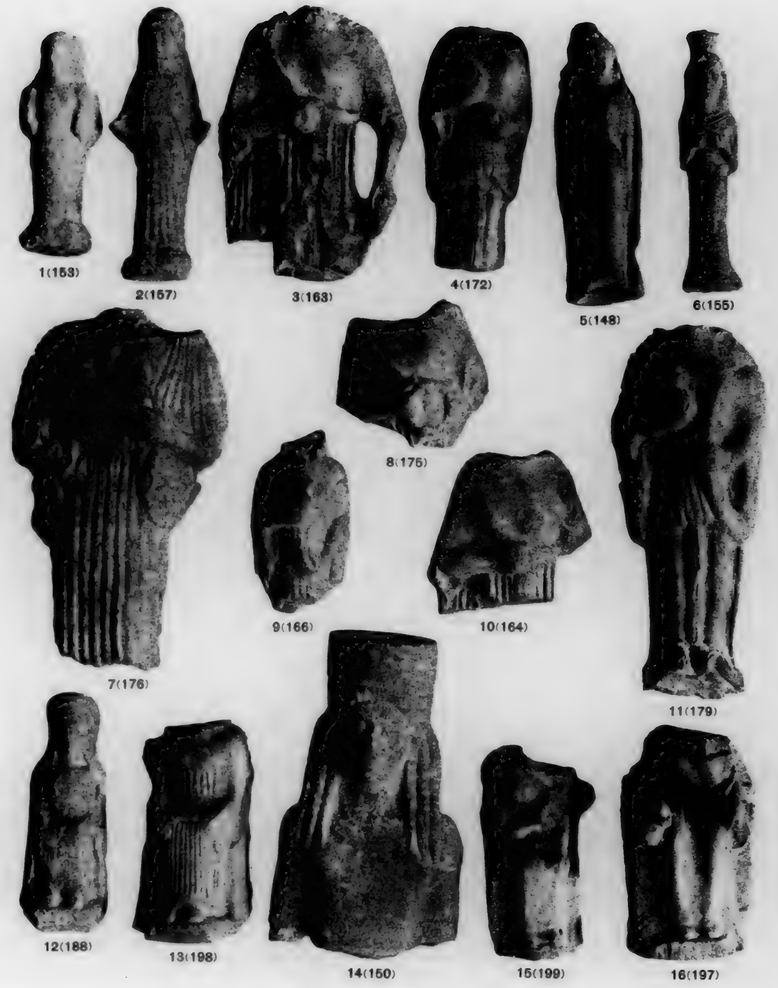
TERRA COTTA FIGURINES. – TIRYNTHIAN ARGIVE TYPE: SEATED FIGURES



TERRA COTTA FIGURINES. – ADVANCED ARGIVE TYPE



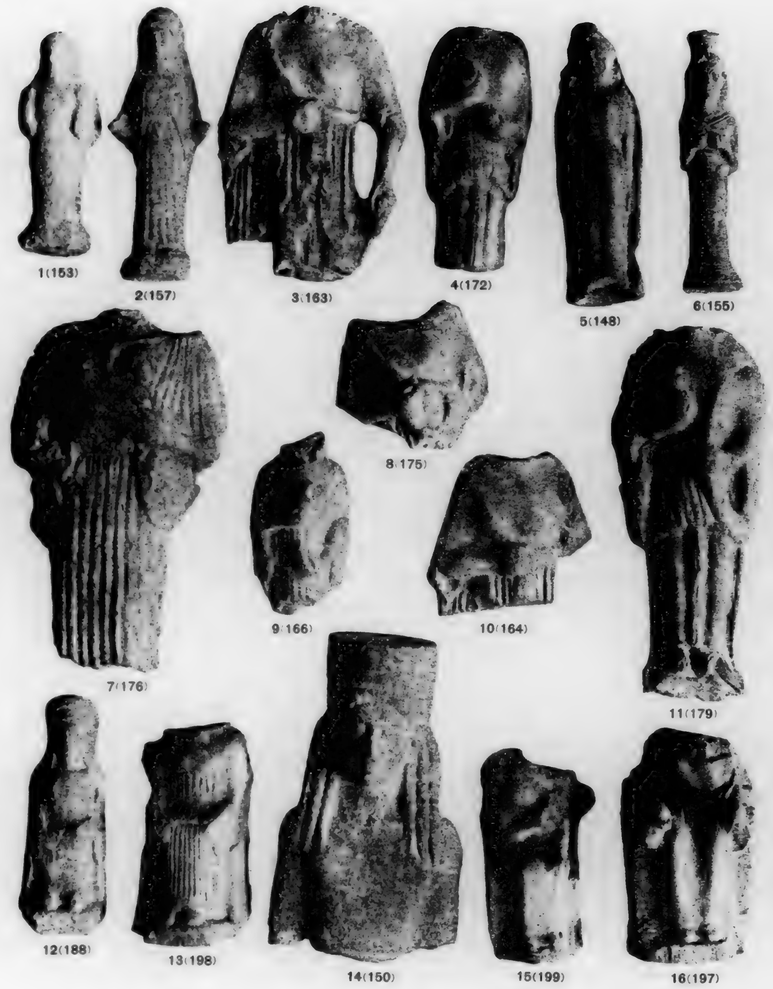
TERRA COTTA FIGURINES.—ADVANCED ARGIVE TYPE: HEADS



TERRA COTTA FIGURINES.—EARLY ARCHAIC TYPE



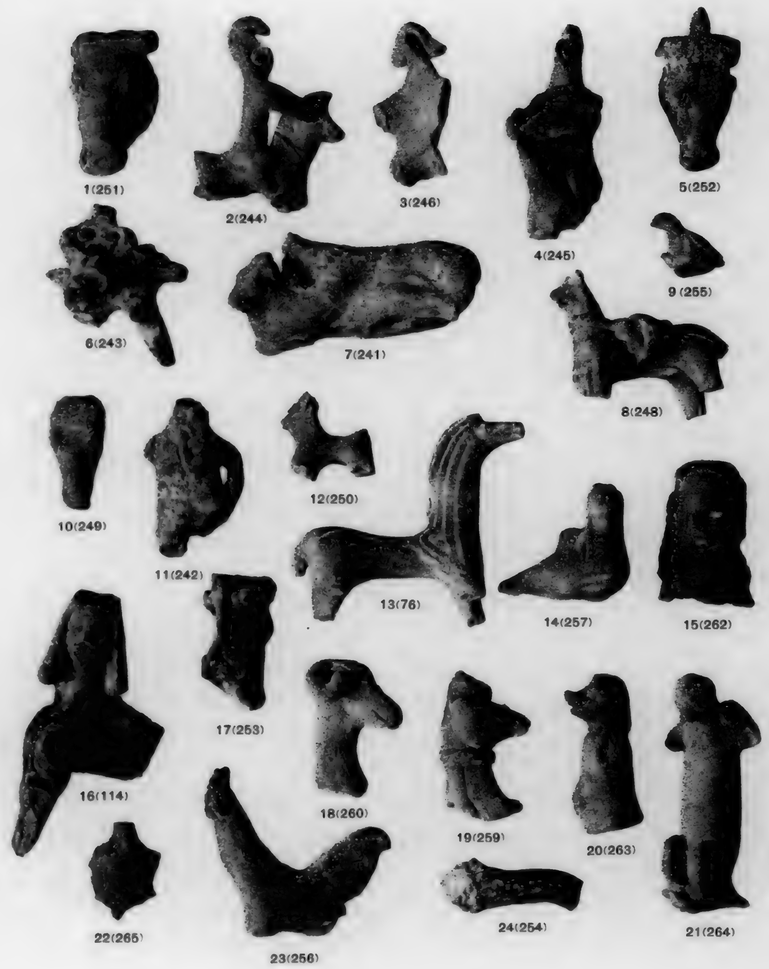
TERRA COTTA FIGURINES.—ADVANCED ARGIVE TYPE: HEADS



TERRA COTTA FIGURINES.—EARLY ARCHAIC TYPE



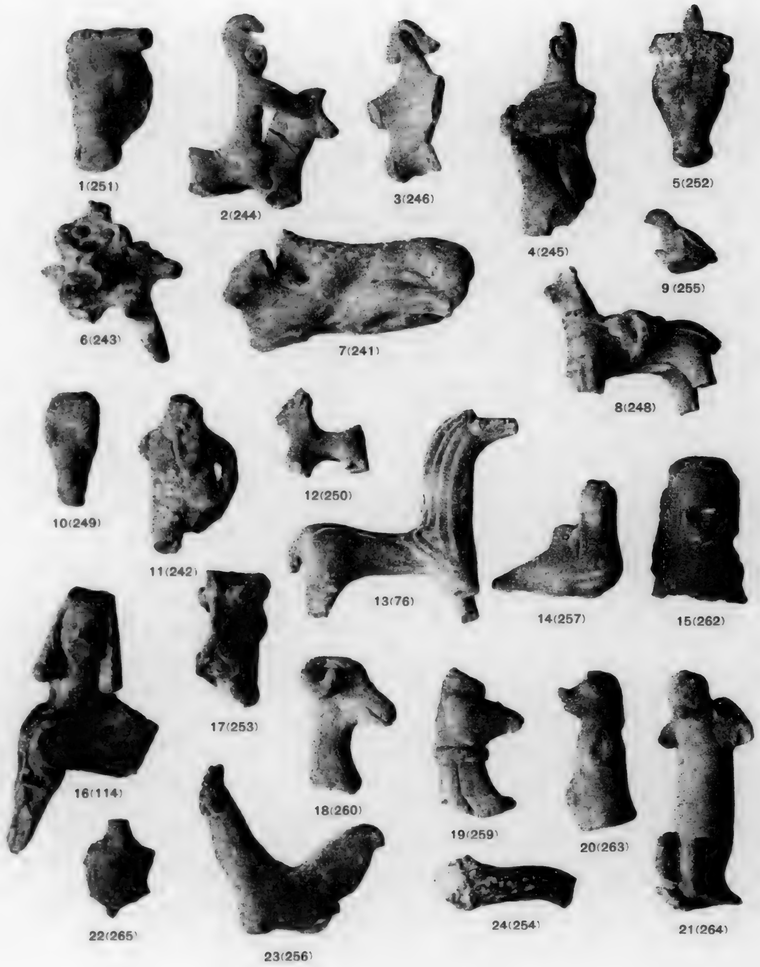
TERRA COTTA FIGURINES. – EARLY ARCHAIC TYPE (Nos. 3, 4, 6, 8—10, 12–15); ADVANCED ARCHAIC TYPE (Nos. 1, 2, 5, 11); FREE STYLE (No. 7)



TERRA COTTA FIGURINES. – ANIMALS



TERRA COTTA FIGURINES. - EARLY ARCHAIC TYPE (Nos. 3, 4, 6, 8—10, 12–15); ADVANCED ARCHAIC TYPE (Nos. 1, 2, 5, 11); FREE STYLE (No. 7)



TERRA COTTA FIGURINES.—ANIMALS

THE TERRA-COTTA RELIEFS

THE TERRA-COTTA RELIEFS[1]

By CHARLES WALDSTEIN and JOSEPH CLARK HOPPIN

The Terra-Cotta Reliefs form a portion of the interesting finds among the objects of the lesser arts which the excavations at the Argive Heraeum has yielded. The greater number of them were found during the first season in 1892, in what we termed the "black layer" below the foundation walls of the Second Temple. Though we are not justified in saying that this black layer ran continuously round the foundations of the whole Temple, earth of this consistency, containing objects of the same character, was found at so many points in the filling for the Second Temple that a certain degree of continuity may be assumed. Still, at times, the black earth was found in greater thickness and the objects in greater profusion; so that we were led to use the term "pockets." Other specimens were discovered, chiefly on the south and southwest slopes, in the third layer of earth which had been massed as filling for the Second Temple; so that on the whole, the provenience of all these objects may be designated as the filling below the Second Temple. The chronology of all objects found in this filling would thus be fixed in the one direction as being prior to the year 423 B. C. The other limit cannot be determined in the same way by the conditions of excavation; especially as objects manifestly belonging to widely different periods were found together in this filling. We may, however, anticipate and mention one fact which will necessitate fuller explanation on some future occasion, namely, that none of these terra-cottas were found on the same level as the Mycenaean walls erected on the bed-rock below the filling. Further points, in so far as they can now be determined, will be noted as we examine each individual fragment.

The terra-cotta reliefs will be considered in two groups: first, those that ornamented flat objects of terra-cotta — plaques, tiles, *pinakes*, bricks, etc.; and, secondly, those that evidently formed parts of terra-cotta vessels or vases decorated in relief. We shall in this chapter confine our study to the former group.

These plaques (Plate XLIX.) are ten[2] in number; they are all, with the exception of Nos. 9 and 10, in a more or less fragmentary condition.

1. Winged figure to right, legs in profile, head and body *en face*. Upper left corner missing. Length, 0.14 m.; width, 0.085 m.; thickness, 0.008 m. Found on the Second Temple Terrace.

2-4. Rectangular reliefs, bordered by incuse circles, the centres of which are raised, inclosing two square fields. In each field, a winged figure running or flying to left.

2. Length, 0.07 m.; width, 0.085 m.; thickness, 0.026 m.

3. Length, 0.10 m.; width, 0.085 m.; thickness, 0.027 m.

4. Length, 0.117 m.; width, 0.073 m.; thickness, 0.023 m.

All these were found in or back of the South Stoa.

5. Form similar to No. 2, rectangular field. Two men facing each other with uplifted arms. Length, 0.096 m.; width, 0.086 m.; thickness, 0.031 m. Second Temple Terrace.

[1] This chapter, descriptive of them, is here reproduced as published in the *American Journal of Archaeology* (vol. II. 1898, pp. 173–186), with slight corrections and additions.

[2] An eleventh fragment, similar in form to No. 2, but with only a foot showing in the field, was too much mutilated to be published.

6. Part of a rectangular relief, representing a bearded man in a chariot, driving a quadriga.
Length, 0.085 m.; width, 0.087 m.; thickness, nearly 0.01 m.

7. Fragment with similar subject, only one horse, much smaller and less well preserved.
Length, 0.069 m.; width, 0.43 m.; thickness, 0.01 m. Both Nos. 6 and 7 from the Second Temple Terrace.

8 a and **b.** Two fragments from the same relief. Incuse circles as in No. 2, bordering square fields. Also a rosette with eight leaves.

(**a.**) Fore part of Centaur to right, holding a branch. In the field, rosettes formed of four leaves and four diamonds alternating.
Length, 0.091 m.; width, 0.079 m.; thickness, 0.018 m.

(**b.**) Lower portion of a kneeling figure to left.
Length, 0.067 m.; width, 0.056 m.; thickness, 0.02 m. Found back of the South Stoa.

9. Small square relief, well preserved. Above, an extension pierced by a hole. In the field, a lion to right.
Length, 0.05 m.; width, 0.045 m.; thickness, 0.014 m. From east of the Chambers on the Second Temple Terrace.

10. Small rectangular relief. Two women in a chariot to right, driving a quadriga. Upper part pierced by a hole.
Length, 0.054 m.; height, 0.046 m.; thickness, 0.01 m. Probably found back of the South Stoa.

All these plaques, with the exception of No. 8, are made of a fine reddish clay. No. 8, however, is made of a very coarse greenish yellow clay, in which small stones are visible.

The question what purpose these plaques served is not easily determined. There are two classes of ancient metal relief work: *repoussé*, or beaten work, and pressed, or stamped work. The stamped work, especially in soft and thin gold, was evidently made from a mould[1] upon which the thin metal was pressed. The use of so brittle a material as clay, however hard the baking may have made it, and however thick such brick-like plaques as Nos. 2, 3, 4, and 5 may be, would be strange. Still it is not impossible that the examples just mentioned may have served that purpose. All these reliefs are influenced to some degree by the style suggested by metal work. It is not impossible that they may have served as "backing" for a thin coating of metal. But this is not likely, because for this the same objection of the softness and brittleness of the material might be adduced. Moreover, there is no trace whatever on their surface that such a covering existed. And, considering the peculiar adhesive effect the oxydization of bronze exerts on extraneous objects (many vases being found at the Heraeum to which bronze objects were stuck fast), it is inconceivable that no traces of such a covering should have been found. A specimen of a mould in terra-cotta was found at the Heraeum, 0.11 m. in length, 0.7 m. in width, and about 0.01 m. in thickness, flat on one side and curved on the other. In the flat side were several holes of varying shapes, sunk to a depth of several millimetres. A cast taken from this mould showed a series of objects, one of which undoubtedly represented a mollusk, the *murex*, or purple shell, so common on Mycenaean vases. The artist has made the common mistake in representing this shell sinistral instead of dextral; he has also made the anterior canal too wide. Whether the others represent nuts, fruit, or seeds of various shapes, we cannot decide. The nearest analogies to such a mould are found in Naucratis,[2] and the so-called "cake-stamps" (*Naukratis*, I. p. 45, pl. 29), which are clearly of a very late date. Mr. Cecil Smith

[1] See a good instance of this in the bronze mould in the Ashmolean Museum, Oxford, published by H. Stuart Jones, *J. H. S.* 1896, p. 323.

[2] Cf. also Evans, *J. H. S.* VII. p. 44, and Introduction, p. xliv.

informs us that there are in the British Museum, thus far unpublished, stamps of a similar shape to ours, but none with the same subject. The presence of the *murex* might point to a somewhat early date for our mould, but there is no further clue to the date.

That all these plaques are *ex votos* is the only natural explanation of their existence at the Heraeum. Nos. 9 and 10 certainly serve that purpose, as the holes in their upper parts for hanging them up show, and Nos. 1, 6, and 7 can hardly be anything else.

The technical method seems to have been the same in all, namely, that the clay was stamped while soft, and afterwards fired. Nos. 8 and 9 present the peculiarity of being treated with a sharp knife after firing, in order to express details and to emphasize lines; this is apparent from the knife-marks on the surface of the clay, and from the fact that in several places the outlines have been trimmed down, leaving a fainter line at the back of the relief.

No. 1. — This relief is especially interesting in that while, as we shall see, it manifests Hellenic elements, it has traces of Oriental influence more strongly marked than the others. In fact, we may say that the terra-cottas in relief manifest the 'Oriental' character in far greater proportion and pronouncedness than is the case with the terra-cotta figurines in the round. While we found but few specimens among our many hundred figurines which bore clear traces of Oriental influence, the proportion of terra-cotta reliefs which show this influence is very large, and, as in No. 1, this Oriental character is clear and pronounced. This is a very significant fact, strengthening, as it does, our conviction, based upon much testimony from other quarters, that Greek sculpture in the round, the *statue* of pure art, is a specifically Greek development; while Oriental influences only find their way into Greece through the channels of *decorative* art, especially through ornamental vessels in ceramic art and metal work.

The subject represented is, at first sight, quite simple. It is a nude, winged figure. The upper part of the body, as well as the head, is in full face, while the lower part from the waist downwards is in profile. This want of unity in composition is the rule with reliefs, as well as figures in the round, of this early period. Such inconsistency in attitude, by a curious effect of conventionalism, survived long after the artists had advanced beyond this point of archaic awkwardness. Ceramic art is a case in point, since not till after the Persian wars was this conventionality abandoned, and instances in sculpture are too numerous to mention.

The head[1] is surrounded by a mass of hair, which falls down to the shoulder on both sides in a heavy, ribbed mass, while over the forehead it lies in waves. On the left eye is a slight indentation which at first sight seems like an iris, but which on a careful examination proves to be merely accidental, no such hole being apparent in the other eye. The nose is flat and the mouth hard and straight, a slight effort being made to model the lips and chin. The scheme of the hair is strikingly like that of the Melian or the Tenean Apollo.

The wings present this peculiarity, that they grow directly from the breast, in front of the shoulders, which they entirely conceal. The arms are comparatively thin, a result, perhaps, of the difficulty the artist found in dealing with several different planes, the arms being drawn behind the wings.

Whether the figure is male or female is difficult to decide, but it is more probably the

[1] The head of this figure resembles slightly that of the female Centaur on the Relief Vase in the Louvre. Cf. De Ridder in *B. C. H.* 1898, pls. iv. and v.

former. When it is carefully examined, the traces of a very short wavy chiton can be discovered, at a slight distance below the waist. Female figures in archaic art are never represented, as far as we know, in a chiton of such shortness. Though there are many points of difference, a comparison of this plaque with the bronze relief from the Acropolis[1] induces us to believe that our figure is male.

The thighs are large in proportion to the body, with careful modeling of the muscles, especially about the knee. The nates are small in proportion to the thighs, a peculiarity seen also on the Selinus Metope of Heracles and the Cercopes. The legs from the knee downwards are extremely thin, similar to those of the Tenean Apollo. In fact, our relief seems to afford a mixture of the exaggerated muscularity of the Selinus Metope and the slimness of the Tenean Apollo.

The attitude of the figure is not necessarily that of one walking, but is due rather to the inability of the artist to represent the legs and feet from the front. What the hands hold is clearly not a wreath, but a conventionalized flower or branch. This forms part of the action itself, since each hand holds an end of the ornament, and it thus becomes a sort of *contaminatio* of a plant and scroll ornamenting the background, introduced at the same time into the action of the figure itself. This action is, in reality, a reminiscence of the well-known "Thierbändigerschema,"[2] of which the Persian Artemis,[3] falsely so called, is a good example. The winged figure in this connection was one of the types adopted by the Greeks, and was remodeled to suit their own peculiar needs, since, though the Hellenic character of the Persian Artemis is now established, no one denies that the original type was a foreign importation. The addition of the wings seems to be a feature of the later archaic art,[4] since they are certainly unknown as attributes of the human figure in Mycenaean or Geometric art, nor do we find them on the "Island Stones."[5]

The mythological significance of the relief, if such it has, is not clear to us. We can only say that it is a winged figure treated in an ornamental manner. We use the term "ornamental" advisedly, with a more literal signification than is generally given; for one of the most peculiar and striking features of this representation is the action of the figure. The winged "genius" is holding in both hands a mere ornament, a decorative design, which certainly is no implement of use, nor has it any special significance. But the use made of it here is quite distinctive and original. It is as if the decorative feeling of the modeler of the plaque had been so strong that it obtruded itself into his representation of a human figure, becoming an integral part of the attitude and action, at the expense of the logic of representation, as far as the human figure itself is concerned. This introduction of the ornament seems to point to two customs in the decoration or framing of scenes and representations of figures on vases, bronzes, terra-cottas, etc.; namely, the continuous scroll or other ornament bordering these scenes, as with a frame, and the introduction of ornaments into the field or background, which the Germans have called "Füllornamente." Such framing bands and "Füllornamente" are the composite motives which appear to have led the artist to introduce this new form of ornament into the field of this relief.

We have had occasion to cite the "Persian Artemis" as an analogy to our figure. A direct repetition of the motive of our plaque may be found on a bronze plaque from

[1] *J. H. S.* 1893, p. 259, fig. 26 (Bather).

[2] E. Curtius, *Gesammelte Abhandlungen*, II. pp. 110 ff. ('Wappengebrauch und Wappenstil im Alterthum').

[3] Studniczka, *Kyrene*, p. 155.

[4] Milchhöfer, *Anfänge der Kunst*, p. 86; Tsountas, 'Εφ. 'Αρχ. 1891, pp. 34 f. Cf. Langbehn, *Flügelfiguren*, etc.

[5] We have just heard from Mr. Hogarth that winged human figures which he considers to be of 'Mycenaean' style have recently been discovered by him in Crete.

Dodona,[1] but of a manifestly later date. Here, however, the ornament has been treated in a precisely similar fashion, the ends of the scroll being held in each hand. In spite of the lateness of the Dodona plaque, a quasi-Oriental influence may easily be detected. A similar position of hands may be noticed on the Euphorbus plate.[2]

An almost exact duplicate of our figure may be found on the gold *hormus* from Camirus.[3] Though the centaur, with whom our figure invites comparison, has no wings, the most striking similarity of style is noticeable when we compare the two. The treatment of the hair, body, nates, and legs is identical. The wings are supplied by the Artemis on the same jewel, and, moreover, present the same peculiarity we have commented on before, namely, that they grow directly from the breast, concealing the upper part of the arm and shoulder. Our figure, in fact, might almost be composed by a combination of the centaur and the Artemis on the *hormus*. This jewel, which is certainly Rhodian, exhibits more than any other work known to us so marked a similarity of style and technique with our plaque as to suggest some very close connection between them. More than this we do not venture to say, since it has not yet been determined whether Rhodians were influenced by Argives, or *vice versa*. It may well be the case that the Rhodian types are derived from Argos, since Camirus, according to legend, was a colony of Argos, founded by the Heraclid Tlepolemus,[4] and was counted as one of the towns of the Doric Hexapolis. The presence, also, of the Argive alphabet in Rhodes is well known. (Cf. the Argive *lambda* on the Euphorbus plate.) As a last comparison, we might mention a relief somewhat similar in style, but probably earlier, found at Aegina.[5] This relief exhibits the greatest similarity in the treatment of the hair. That it is Peloponnesian and not Aeginetan seems fairly evident.

In summing up, we may say that, while our plaque exhibits Hellenic features, especially in the modeling of the figure, the spirit of the composition and the introduction of the wings are distinctly of Oriental origin. Moreover, we find absolutely no Mycenaean or Geometric elements, but those which are characteristic of the early Corinthian vases. We are forced, however, to assign our relief to a slightly later date than those vases which exhibit this "Thierbändigerschema," since the conventional and decorative treatment of the ornament of our plaque, admittedly without a meaning, is certainly later than this *schema*, not earlier. Therefore we may assign it approximately to the beginning of the seventh century B. C. Even in the best period of Greek art, such a decorative solecism may be met with, as, for instance, in the beautiful red-figured vase of astragalus shape, signed Συρίσκος ἐποίεσε, in the Papa Giulio Museum at Rome.

Nos. 2–5. — These are all of similar technique, and evidently contemporaneous. Fragmentary as they are, we have still enough to show that their dimensions were from 0.10 to 0.12 m. long and 0.7 to 0.9 m. wide. Of all our reliefs, these show the metal influence in a most marked manner, the incuse circles being probably an imitation of the nail-heads used to fasten bronze sheathing to wood, while the division into fields, as well as the technique, finds its parallel in the series of bronze reliefs from Olympia,[6] Dodona,[7] the Acropolis,[8] and the temple of the Ptoan Apollo.[9] The subject of the reliefs Nos. 2–4

[1] Carapanos, *Dodona*, pl. xviii. fig. 3.

[2] Salzmann, *Necropole de Camsiros*, pl. liii.; cf. also pl. xxvi.

[3] *Ibid.* pl. 1.

[4] Diod. IV. 58; V. 57; Pind. *Ol.* vii.

[5] Staïs, 'Εφ. 'Αρχ. 1895, p. 263, pl. xii.

[6] Furtwängler, *Olympia*, IV. ('Die Bronzen') pls. xxxvii., xxxviii.

[7] Carapanos, *Dodona*, pls. xvi.–xviii.

[8] *J. H. S.* 1892–93, p. 249 (Bather); Wolters, *Athen. Mitt.* 1895, p. 473.

[9] *B. C. H.* 1892, p. 348, pls. x., xi. (Holleaux).

A survey of such reliefs is given by De Ridder in his monograph, "De Ectypis quibusdam aeneis, quae falso vocantur Aegino-Corinthiaca."

is the same: two winged figures moving rapidly to the left in the usual "knielauf-schema."[1] What the objects are they hold in their hands cannot be determined with certainty; that in the right hand is paralleled by a similar object in the hands of the figures on the terra-cotta reliefs from Sicily[2] of later style. Kekulé, however, refrains from defining these objects. That in the left hand resembles an axe. To identify these figures as gorgons seems impossible, and we must be content merely to term them winged daemons. They are similar in style to the reliefs from Olympia,[3] which contain figures called by Furtwängler "Daimons," retracting the view he had previously expressed in Roscher's *Lexicon*.[4] It is impossible to tell whether the figures are male or female, though the latter seems more probable considering their similarity to the figures on the relief previously cited, which are certainly female. It may be here noticed that these figures bear a strong resemblance to the "Niké of Archermus," but with the same difference that we shall plainly see when we compare them with gorgons. Such monsters, while generally represented in the "knielauf-schema,"[5] have always the body in profile and head *en face*, and in the case of our figures both head and body are represented in profile. Moreover, our figures are not holding the usual bird or animal. Only one relief in terra-cotta of similar technique, though of different subject, is known to us;[6] it represents the Persian Artemis in profile, holding a bird in each hand. The incuse circles are precisely similar to our reliefs, and a rosette there is similar to those on No. 8. Though little connection may be assumed between the Persian Artemis and our daemons, we see that the same Oriental influence was at work at the time of their manufacture.

No. 5. — What the subject of No. 5 represents is extremely doubtful, and several interpretations are open to us. It might be a boxing match, if such be the correct identification of the two Olympia reliefs (*Olympia*, IV. pls. 39, 703, 704 *a*; cf. also Furtwängler, *Bronzefunde*, p. 91), or the similar group on the Geometric vase of Copenhagen.[7] A certain similarity may be detected if we compare our relief with a group on the well-known Tripod vase from Tanagra in Berlin.[8] Save that no traces of a wreath can be discovered, the scene on our relief further resembles one of the Ptoan reliefs already cited (*B. C. H.* 1892, pl. xi. 3; No. 45 in De Ridder, *op. cit.*). Again, were it not for the lack of the tripod, a connection might be assumed with the scene on the mould in the Ashmolean Museum we have already referred to. Perhaps we might recognize in it the ἀκροχειρισμός or the preliminaries of the wrestling match. Instances of this have been identified in several monuments.[9] Or perhaps the action of our relief may be only a salutation. More than this we cannot say.

In style there is a closer analogy between this relief and bronze relief work than is the case with Nos. 2, 3, and 4. The treatment of the figures is precisely identical with that of the above-mentioned Ptoan relief, both in the hair and in the build of the bodies. The profiles, too, are similar. Thus the question of dating our plaques becomes much

[1] Curtius, 'Die Knieenden Figuren der Altgriechischen Kunst,' *Winckelmanns Programm*, 1870 (*Gesam. Abhand.* II. pp. 116 ff.).
[2] Kekulé, *Terracotten von Sicilien*, pl. lv.
[3] *Olympia*, IV. pls. 39, 699 *a*, p. 102, No. 1.
[4] *Ibid.* I. p. 1709, *s. v.* Gorgonen.
[5] Milchhöfer, *op. cit.* p. 86, fig. 56.
[6] Lenormant, *Arch. Zeit.* 1866, p. 258, pl. A.
[7] Furtwängler, *Arch. Zeit.* 1885, p. 137, pl. viii.
[8] Loeschcke, *Arch. Zeit.* 1881, pl. iii.
[9] Waldstein, in *Proceedings of the Cambridge Philological Society*, 1882, p. 2, where, in connection with Arist. *Eth. Nic.* III. 1. 17, p. 1111 (Bekk.), the following illustrations are mentioned: A vase in the possession of the late Camille Lecuyer at Paris, a relief in Clarac, *Musée de Sc.* II. pl. 184, No. 55; Krause, *Gymnast. und Agonistik*, II. pl. x. 29. Cf. also Vase Catal. Brit. Mus. III. E. 78, as well as Gerhard, *Ant. Bildw.* pl. 89, also Baumeister, *Denkmäler*, I. p. 502, fig. 544. I have recognized another representation of such a scene in a vase in the Museum of Fine Arts, Boston, which I hope soon to publish.

simplified. For, though we cannot say with absolute certainty which of the two is earlier, the fact that they are contemporaneous (at least they would both belong to the same decade) is too evident to be doubted. These bronze reliefs belong approximately to the beginning of the seventh century, which gives us a similar date for our reliefs.

No. 6. — This design here seems rather more advanced in style. The subject of a charioteer in his chariot was not only common through Egyptian and Assyrian art, but was a favorite theme throughout the whole Mycenaean period, as is shown by the grave-stelae found by Schliemann at Mycenae. We owe the introduction of the quadriga to the Dipylon period, from which certain features of our relief are evidently derived, namely, the connection of the pole to the wagon by a rope or staff extending from the dashboard.[1] The ἄντυξ has the usual curved form seen on Egyptian wagons, and the wheels are of the common type found on most of the Dipylon chariots. A counterpart of this group may be found on the François vase,[2] the figure of Zeus in his chariot at the marriage procession of Peleus and Thetis. In fact, we are in a position to date this relief between the Dipylon period and the François vase. Its Hellenic origin need not be questioned; there is certainly no trace of Ionic influence.

No. 7. — The technique of No. 7 is vastly inferior. It has also suffered far more from abrasion. This makes it difficult to decide whether one or two persons are represented in the chariot, more probably only one. Doubt also exists as to whether the charioteer is holding the reins or is in the act of shooting an arrow, and from the curious position of the body with regard to the chariot, a certain similarity may be deduced with the marble relief[3] from the Acropolis of the figure mounting a chariot. At all events, the chariot shows the same influence as No. 6. Its chief peculiarity lies in the fact that but one horse is represented, which fact must be assigned to the incompetence of the artist, since never, in Greek art, does a chariot of this form, drawn by one horse, occur.

Nos. 8 a and b. — That these fragments fit together is fairly evident; but unfortunately the sides of the fracture, owing to the soft texture of the clay, have been considerably worn away, and thus the breaks, while following the same lines, do not coincide exactly. Still, the foot in the upper right-hand corner of *a* is the continuation of the leg of the figure in *b*. Aside from its peculiar technique, to which we have already called attention, its chief interest lies in the seeming irregularity. Portions of three fields are preserved, two of which are separated by the same incuse circles met with in Nos. 2, 3, 4, and 5. The rosette of *a* falls beneath the field of *b*, being used instead of an incuse circle, as we found in the case of the Lenormant plaque from Mycenae. It is impossible, however, to tell the general form of the relief, how many fields it contained, or what subject is represented. As in the case of Nos. 2 to 5, the connection between this and the metal reliefs is obvious.

The centaur, the chief figure of the relief, is represented with a horse's fore legs plainly visible, though their lower part is missing. This type of a centaur with the fore legs of a horse is later than that with human fore legs.[4] When exactly the later type was introduced cannot be determined, there being no distinct dividing line between the two types, which often appear side by side.[5] On archaic gems,[6] however, only the later type occurs. Evidently the two styles continued together for a considerable period. So far

[1] Helbig, *Das homer. Epos*, p. 141, note 3, fig. 83. Cf. Furtwängler, *Arch. Zeit.* 1884, p. 108, pl. viii. 4.
[2] *Wiener Vorlegeblätter*, 1888, pls. ii.–iv.
[3] Collignon, *Hist. de la Sculpture Grecque*, I. fig. 194.
[4] Roscher, in Roscher's *Lexicon*, II. p. 1076.
[5] For example, on the frieze from Assos, Clarke, *Investigations*, etc. pls. xv., xx. See also on a Cyrenean Vase, *Arch. Zeit.* 1881, pl. xi.
[6] Rossbach, in *Arch. Zeit.* 1883, pl. xvi. fig. 16.

as can be judged from other monuments which illustrate the later type, we are justified in regarding our relief as one of the earliest examples of that type.

To restore the kneeling figure is impossible. It suggests faintly the "knielauf," but that can hardly be the action. The position of the legs resembles to a certain degree that of the figure on the metal relief from Olympia.[1] As no trace of a bow or arrow can be found on our figure, its reconstruction as an archer is impossible. Apart from the carefulness of detail, the dress of the figure is a most interesting feature. The figure wears a broad belt, and above it the lines of the chiton are indicated by incisions in the clay. No trace of any lower garment can be discovered. Whether this, as well as the fact that the sex of the figure is not indicated, points to any intention on the part of the artist to denote a close-fitting under-garment is doubtful. Carelessness is again the probable explanation. This garb is paralleled by the figures on the Vaphio cups,[2] which wear the broad belt continued below the waist as a sort of breech-cloth, though the upper part of the body is left bare. The portion remaining of the third field is so small that we cannot determine what the figure was. It might be the rear portion of a bird, and the whole a figure of the Persian Artemis type.

While assigning an Hellenic origin to No. 8, we must nevertheless class it among the works of the so-called Oriental Greek style, of which the Argive-Corinthian is a part. The incuse circles we have already discussed; the rosette is a favorite form of decoration all through the "Corinthian" period, besides occurring on bronze reliefs.[3] The ornament above the centaur is characteristic, and may be found on a Melian vase.[4] Here we have the use of the ornament in the field as an instance of the *horror vacui* so characteristic throughout the "Corinthian" period, a feature which does not obtain in the succeeding periods. We may, therefore, be justified in assigning this relief to the end of the seventh century, perhaps a little later. Earlier than the spread of the Oriental influence it cannot be.

Nos. 9 and 10. — These fragments properly belong together, since both are complete and illustrate admirably the *pinax* form. This in itself would show their connection with the Corinthian *pinakes*[5] in Berlin, since the *pinax* does not seem to have been used prior to this period. The lion on No. 9 is chiefly remarkable for the enormous size of his head in proportion to his body. From the absence of any ornaments in the field, as well as from this peculiarity of head, which strongly resembles that of the lions on "Early Attic" vases,[6] we should feel inclined to assign this plaque or *pinax* to a later stage of the Corinthian period, perhaps about the early part of the sixth century. No. 10, on the other hand, shows traces of Dipylon characteristics. In spite of the abrasion from which the relief has suffered, it is evident that two women are represented, but in a more advanced style than is characteristic of the Dipylon period; the horses, however, show the feeling of Dipylon art. Nothing of the chariot is plain, except that the wheels are probably four-spoked, though even this cannot be decided. No. 10 is to be assigned to a later date than the Dipylon period, but probably earlier than No. 6.

[1] *Olympia*, IV. pl. 40.
[2] Tsountas, in Ἐφ. Ἀρχ. 1889.
[3] *J. H. S.* 1893, p. 246, fig. 18 (Bather); *Olympia*, IV. pl. xxxvii. 712.
[4] Conze, *Melische Vasen*, pl. ii.
[5] Furtwängler, *Vasensammlung*, I. p. 47.
[6] Böhlau, *Jahrbuch d. Inst.* 1887, pl. iv.



THE ARGIVE HERAEUM.—TERRA COTTA RELIEFS

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THE ARGIVE HERAEUM.—TERRA COTTA RELIEFS

THE VASES AND VASE FRAGMENTS

THE VASES AND VASE FRAGMENTS

By JOSEPH CLARK HOPPIN

PREFACE

The publication of the Vases and Vase Fragments from the Heraeum has proved a far more arduous task than I expected when the work was intrusted to me eight years ago. As the time for committing it to the press approaches, I am keenly conscious of its many shortcomings, for, in the six years which have elapsed since the completion of the work and its final revision before going to press, the quantity of new material found in Greece, which might serve to throw new light upon many of the problems the vases from the Heraeum afforded, has increased enormously, and the greater part of it, being as yet unpublished, has been inaccessible to me. I could also wish that it had been possible for me to make the final revision of the work in Athens, with the actual material at my command, since I realize very clearly that many of the points which have presented themselves to me during the six years since I left Athens must remain all too superficially treated, owing to incomplete notes and a memory sometimes treacherous. Such cases, I hope, will not prove of vital detriment to the value of the work.

Two facts must be mentioned to secure a fair understanding of the work. First, owing to the smallness of the means at my command, I am unable to publish the material as I had originally hoped, and consequently have omitted much which, though not of supreme importance, would have been of distinct benefit had it been possible to retain it. Secondly, I see very clearly that the enormous mass of material should, to secure the best results, have occupied the attention of several workers for at least twice the length of time I have been able to devote to it. Thus the work as it now appears is a small selection of the total material, and cannot in the strictest sense be called either final or complete. I have endeavored as far as possible to present, or at least to mention, all the types and classes that were found; but important omissions must inevitably occur when over two hundred thousand fragments are to be dealt with. Classes like the Geometric or Argive should each be treated in as much space as the whole of this volume, if their elaboration were to be considered final. But the desire to make known to the world as soon as possible the results of one of the most important modern excavations has induced us all to hasten the completion of our several tasks, and leave the various finer points to be more carefully investigated by our successors.

It is a great pleasure, on the completion of my task, to look back on the warm friends it has brought me, and to thank them for the many and various kindnesses received at their hands. First and foremost, I wish to thank most heartily my friend and chief, Professor Charles Waldstein, for the ready help and encouragement he has always given me, for his keen and intelligent interest in my work, and for the various suggestions and theories he has outlined for my benefit. The departure from Athens at the end of the first year's work of Dr. Theodore Woolsey Heermance, who had shared with me the disagreeable task of cleaning and sorting the fragments, deprived me of most valuable assist-

ance during the more interesting stage of studying and classifying the material; and I feel sure that, had it been possible for him to have shared the responsibility of the whole work with me, the result would have been far more satisfactory. I am indebted to him for the Appendix on the inscriptions that have been found on some of the fragments. Mr. Cecil Smith of the British Museum will always have my warmest gratitude for the many kindnesses and useful suggestions so ungrudgingly given me during my work in London.

Further, I wish to express my thanks to Messrs. Kavvadias, Stais, and Tsountas of the National Museum at Athens, for their courtesy and kindness in extending to me, during my three years in Athens, the utmost privileges of the Museum; to Professor Wolters and Dr. Zahn of the German Archaeological Institute at Athens, for putting the material from the Acropolis and Aegina so openly at my disposal; and to Mr. David Hogarth, sometime Director of the British School at Athens, for an opportunity of seeing the pottery found in his excavation at Melos. I have also received many valuable suggestions from Professor Ernest Gardner of University College, London, Mr. Paul Perdrizet of the French School at Athens, and Mr. Carr Bosanquet, Director of the British School at Athens.

I must not forget to thank Mr. Gilliéron and Herr Rohrer for their careful and painstaking work in preparing the drawings and photographs. I am especially grateful to Janni Papadakis, vase-mender in the National Museum at Athens, who for three years helped and spared me in every way.

Last of all, I wish to express to my dear friend, Professor Richard Norton, Director of the American School at Rome, my grateful thanks for reading the manuscript of the work during its preliminary stage (a labor of love), and for the valuable suggestions he has given me.

NOTE.

In fairness to this section of the Heraeum publication the following facts should be stated. The manuscript was delivered to the committee on April 1, 1899. Two years later, in the hope of a speedy publication, it was revised as thoroughly as circumstances permitted. At the present date (November, 1903) the larger part has been in type for a year and a half, and any further revision is impossible for many obvious reasons without a complete rearrangement of the material. That it should not have been possible to consider the vases and fragments from the Heraeum in connection with the new phases of the Mycenaean era revealed by the recent excavations in Crete, no one regrets more than the writer.

ABBREVIATIONS EMPLOYED.

PUBLICATIONS.

Athen. Mitt. Mittheilungen des Kaiserlich Deutschen Archaeologischen Instituts, Athenische Abtheilung.
Röm. Mitt. Mittheilungen des Kaiserlich Deutschen Archaeologischen Instituts, Römische Abtheilung.
Jahrb. Jahrbuch des Kaiserlich Deutschen Archaeologischen Instituts.
B. C. H. Bulletin de Correspondance Hellénique.
J. H. S. Journal of Hellenic Studies.
A. J. A. American Journal of Archaeology.
Rev. Arch. Revue Archéologique.
Gaz. Arch. Gazette Archéologique.
Ann. dell' Inst. Annali dell' Instituto di Corrispondenza Archeologica.
Bull. dell' Inst. Bulletino dell' Instituto di Corrispondenza Archeologica.
Mon. dell' Inst. Monumenti Inediti dell' Instituto di Corrispondenza Archeologica.
Not. d. Scavi. Notizie degli Scavi (Academia di Lincei).
Mon. Ant. Monumenti Antichi.
Arch. Zeit. Archaeologische Zeitung.
Arch. Anz. Archaeologischer Anzeiger (in Jahrbuch).
Ἐφημ. Ἀρχ. Ἐφημερὶς Ἀρχαιολογική.
Class Rev. Classical Review.
Berl. Phil. Woch. Berliner Philologische Wochenschrift.

CATALOGUES.

Brit. Mus. Cat. Catalogue of the Vases in the British Museum. Vols. II. and III. by H. B. Walters; vol. III. by Cecil Smith.
Louvre Cat. Pottier, Catalogue des Vases du Louvre.
Berl. Cat. Furtwängler, Beschreibung der Vasen im Antiquarium, Berlin.
Mun. Cat. Jahn, Beschreibung der Vasensammlung König Ludwigs in der Pinakothek zür München.
Naples Cat. Heydemann, Die Vasen des Museo Nazionale zu Neapel.
Boston Cat. Robinson, Catalogue of the Vases in the Museum of Fine Arts, Boston.

MISCELLANEOUS WORKS.

Ray. et Coll. *Hist.* Rayet et Collignon, Histoire de la Céramique Grecque.
Dum. et Chap. Dumont et Chaplain, Les Céramiques de la Grèce propre.
Per. et Chip. *Hist.* Perrot et Chipiez, Histoire de l'Art dans l'Antiquité.
Myk. Vas. Furtwängler und Loeschcke, Mykenische Vasen.
Myk. Thong. Furtwängler und Loeschcke, Mykenische Thongefässe aus dem Gebiete des Mittelmeers.
Samm. Sab. Furtwängler, Sammlung Sabouroff.
Aus. Vas. Gerhard, Auserlesene Vasenbilder.
Baum. Denk. Baumeister, Denkmäler des Klassischen Alterthums.
Roscher's *Lex.* Roscher, Lexikon der Griechischen und Römischen Mythologie.
Daremberg-Saglio, *Dict.* Daremberg-Saglio, Dictionnaire des Antiquités Grecques et Romaines.

INTRODUCTION

EARLY in the autumn of 1895, Dr. Heermance and I began cleaning the fragments of vases. These had been brought up from Argos to Athens in small baskets,[1] and included fragments varying from a foot square to pieces no larger than a finger-nail. None had been touched save a few baskets of the first and second year's digging, which had undergone a very superficial cleaning two winters before. Every fragment was thickly coated with a hard crust of dirt, and hydrochloric acid proved the only satisfactory cleanser. Large bowls were used containing a solution, two thirds acid and one third water, into which a basketful of fragments was put, stirred round for a few minutes, and then carefully rinsed in fresh water to avoid any after-effects of the acid. The fragments were then sorted, each class in separate baskets, laid out, and a search made for the component parts of a vase, a task attended with very unsatisfactory results, since in only a few cases could a vase be reconstructed in anything like entirety.

The number of fragments was enormous. No less than two hundred and sixty-five baskets, all more or less full, were cleaned. Owing to the removal of a good deal of waste dirt and closer packing of the baskets, the total material was compressed into about one hundred and fifty baskets. Just how many fragments were included is difficult to say; some baskets which contained large fragments held perhaps several hundred, while in others containing small fragments of the Argive and Corinthian classes, the number amounted to two or three thousand. Roughly speaking, the total number of fragments was about two hundred and fifty thousand. The final sorting gave the following proportion to the various classes: —

Plain	50	Baskets.
Glazed	30	"
Primitive	2	"
Mycenaean	13	"
Geometric	25	"
Argive	20	"
Corinthian	5	"
Black- and Red-Figured	2	"
Miscellaneous	3	"
	150	"

By "plain" are meant all fragments which bore no decoration of any kind whatever.[2] These included a large number of fragments of Mycenaean and Geometric vases, but the bulk consisted of coarse fragments of wheel-made vases, which might belong to any period. In "glazed" are included all fragments which had been covered with a dark brown or black glaze, generally dull, but without other decoration. Some few

[1] The baskets were those usually employed in excavations, about 25 cm. in height and 30 cm. in diameter.

[2] It must also be remembered that the bulk of the fragments found at the excavation had no decoration of any kind, and were therefore not preserved, but thrown on the rubbish heaps. If, therefore, it had been possible to preserve all the fragments of such description, which undoubtedly included a large number belonging to the "Primitive" class, their number would have been materially increased.

of these belonged to vases of the Black or Red-Figured period, but the bulk bore no distinguishing characteristics. In addition to the whole number, five baskets contained vases in an intact or in slightly broken condition.

The proportion of the various sites was as follows: —

South West Corner	50	baskets	S. Stoa 1894 & '95
S. E. Side	6	"	
S. Side, outside peribolos wall	3	"	
Old Temple	10	"	
Above Cyclopean wall	7	"	
Above Upper Stoa	6	"	
E. of chambers	20	"	
S. E. of Second Temple	5	"	
W. Building	2	"	
N. W. Building	5	"	
First year of excavation	30	"	
Unknown	6	"	
	150	"	

Baskets of the first year's digging contained fragments from the Second Temple Terrace, but no more definite information is preserved. Fragments of every kind were found in all these places, but certain classes were more common in certain spots than in others; for instance, on the Old Temple Terrace[1] and in the corner of the second platform below the Cyclopean wall and east of the Chambers, the Geometric fragments were much more numerous than any other kind, while in the southwest corner (east of the retaining wall of the West Building) Mycenaean predominated. The Argive (so-called Proto-Corinthian) style was found in greatest quantities in the southwest corner and on the Old Temple Terrace. Other classes were divided with comparative evenness all through the excavation.

Little advantage is to be gained from the knowledge (in the case of the vases, at least) whence each separate fragment came. Throughout the preliminary stages of the work the fragments from each spot were kept carefully separate, but this proved impossible after the task of piecing them was begun. In several cases fragments from the same vase were found several hundred yards apart. It must be remembered that no apparent trace of layers which could be chronologically divided was observable in any of the different finding places, for the pockets where the fragments abounded in greatest quantity showed that the material had been shoveled in helter-skelter, and it was quite usual to find Mycenaean fragments near the top and Argive near the bottom. In the case of vases of any especial importance, the finding place will always be given in the course of this work.

It is extremely difficult to make a precise estimate of the number of vases which these fragments represent. The number of vases intact or only slightly broken amounted to a little more than a thousand. From the fragments about ten vases were reconstructed almost entirely, about fifty partially so; while those represented by only half a dozen fragments apiece amounted to between two and three hundred. If we should make the extremely modest calculation of four or five fragments to a vase, we should have about fifty thousand vases.

[1] Professor Waldstein informs me that to the best of his recollection this statement is not correct. My only authority for the statement is that several of the baskets, which were clearly labeled "Old Temple Terrace," contained numerous fragments of the Geometric style.

In planning this work, I have endeavored, as far as possible, to model it on Furtwängler and Loeschcke's *Mykenische Vasen*. The chief difficulty experienced among such an enormous mass of fragments was in making a collection for publication which should be representative. In doing so I preferred to err on the side of presenting more fragments than were absolutely necessary, believing that such a plan was better than presenting too little, but I have not hesitated to omit types which are universally known.

Roughly speaking, the Heraeum vase fragments cover almost the whole period of Greek ceramic art from its birth to its decline, a period of perhaps over two thousand years. It will be further shown how the bulk of this material is characteristic of the Argolid, a genuine home industry, and that little was imported. The indigenous types represented are: —

Prehistoric.
Mycenaean.
Geometric.
Argive.
Local (or types which have no prototypes).

Foreign (i. e. imported) types are:

Corinthian.
Early Attic.
Attic Black-Figured.
Attic Red-Figured.
Cyrenean.
Megarean ware.
Roman.

Now, though the list of imported types is larger than the local, the amount of such material is scarcely a tenth of the latter. The reason for the exclusion of foreign products, especially Attic, will be shown later.

The reader may notice that the discussion and exposition of the various vase-classes given here differs materially from that given by Professor Waldstein in the Introduction to this publication. In order that there may be no room for misunderstanding with regard to this point, I desire to state specifically the reasons for this discrepancy.

After two years' work on the fragments, I had independently reached the conclusion that the so-called Proto-Corinthian style included more varieties of vase-classes than had usually been assigned to it, and that it was probably of Argive origin, — a conclusion which confirmed the views expressed by Professor Waldstein four years before. Also that the style was an offshoot of the Mycenaean style, and contemporary with the Geometric, having as its chief motives the arrangement of parallel bands so characteristic on Mycenaean vases. After communicating this view to Professor Waldstein I found that he not only had reached the same conclusion, but was disposed to regard the style as one of the links in a chain which went much farther back, as a development of the principle which he calls "Linear," and which he claims existed in an unbroken sequence from the earliest times. He has already developed his theory so carefully that I do not feel the need of repeating what has been better expressed by him in the Introduction. This is not the place for me to discuss this theory, but simply to define my own attitude in regard to it.

I agree perfectly with Professor Waldstein in the general application of his "linear" theory, and accept his views as to the presence of linear motives in the Mycenaean vases,

and as to the Argolic origin of the so-called Proto-Corinthian style. I do not, however, agree with him in his contention that this style can be traced in an unbroken line throughout the Mycenaean period as far back as the earliest primitive vases, nor do I accept the general classification he has already outlined. It is, of course, fitting that in the General Introduction he should have discussed the relation of the Heraeum vase-fragments to the whole excavation and history of the sanctuary. In so far as the work concerns myself, it seems to me more suitable, avoiding general theories as far as possible, to confine myself to a careful classification of the material, omitting those conclusions which, from my unfamiliarity with all the finds of the excavation, would not have as stable foundations as those expressed by Professor Waldstein. The classification adopted here is the result of careful study of the material for three years; and though I am far from claiming that the results reached or the theories expressed are the only ones possible, I have not hesitated to base the whole of this division of the publication upon them, since they have forced themselves upon me from the material. In fairness, therefore, to both Professor Waldstein and myself, I would state that, as I cannot accept his entire theory, it has seemed to me best to abide by my own exposition and leave the decision to the judgment of scholars.

As to the classification, I may say that I have endeavored, as far as possible, to hold by the old rules and to be as conservative as I could; at the same time, such a large amount of new material demanded in many cases an entirely new arrangement. But it must not be forgotten that no classification can be regarded as final; its main object is convenience; and although several groups may be distinguished, they invariably have, in the case of one group succeeding another, their connecting links, and slide into each other almost imperceptibly. On the Lake of Geneva there is a threefold division, the Petit, Grand, and Haut Lacs, each a separate sheet of water; but one can scarcely draw a straight line across the lake and say where the Petit Lac begins and the Grand Lac ends. In the case of our vases, we have the separate classes, but so gradually removed from each other that we can only emphasize the fact of their division, without being too specific as to the actual point.

I have tried to treat the vases from a relative, not an absolute, point of view. Unless it be recognized that the study of Greek vases is a means to an end, not the end itself, their value is lost. They are not among the grand arts; in fact, the scanty references to them in Greek literature show that the vase-painter or potter, while pursuing an honorable trade, could not claim to be an artist in the great sense of the word. It is true that during the earliest periods vase-painting was one of the few forms of artistic expression, but not the highest form. A civilization which could produce the fortresses, the Bee-Hive tombs of Mycenae and Orchomenos, the gold cups of Vaphio, the golden ornaments and sword blades of Mycenae, is not to be measured by mere vases of terra-cotta! Not but that the vases are artistic; whatever work a Greek did was never anything else.

As historical documents they are extremely valuable. They respond to the various influences at work on Hellas from the earliest times, and reflect in a thousand different ways the life and tastes of its people. It is not a lofty idealism we find in them, but a realism in all its forms. Owing to the crude state of plastic and pictorial art throughout the periods to which our vases belong, we cannot place them on a level with Attic vases of the sixth and fifth centuries; but we can see the steady development towards the later, finer forms.

For their presence at the Heraeum, where there was only a temple and not a settle-

ment,[1] there is but one explanation: they were dedicated to the use of the goddess.[2] In only a few cases has a dedication been scratched on a vase. It is very probable that such offerings were those of the poorer classes, who could afford nothing more expensive than a vase. As the centuries went by, the temple must have become overcrowded with such a mass of pottery, and the presence of numerous rubbish heaps proves that there were periodical cleanings out of the sanctuary. Whether such vases were ever in actual use is doubtful.

From the fact that at the Kabirion in Thebes, potters sat outside the walls of the Temenos and sold their wares, it is probable that such was the fact at the Heraeum, and that from the earliest times the pottery of the Argolid was in great demand, and so cheap and common as to make the introduction of foreign vases rather like bringing "coals to Newcastle."

At first sight the vases from the Heraeum are somewhat disappointing; there is a noticeable lack of strange or beautiful designs, and none of the vases seem to rise above a common level. But the chief value lies, not in the fragments or vases themselves, but in their relation to the results of other excavations, especially those in Sicily and Aegina. It is Aegina that is shown in the closest relation with Argos, since many of the more unusual types found at the Heraeum may also be found in Aegina and nowhere else.

Such a connection forms a valuable contribution to the history of the two states. We know that it was during the reign of Phidon of Argos that the two came together, since Phidon had his mint at Aegina. Phidon's date is variously given — B. C. 770 by Holm,[3] 745 by Stais,[4] while Beloch[5] asserts that he could not have lived earlier than the sixth century. Whether he really introduced the coining of money into Greece, as tradition relates, is another question. As most numismatists are agreed that this could not have taken place before B. C. 700,[6] we must either abandon tradition or else side with Beloch. Holm[7] thinks that he may have introduced Oriental weights and measures into Greece, and thus the introduction of coinage, which followed shortly after, was attributed to him. But the main question does not centre about Phidon so much as about the actual date of the coming together of the two states.

In the recent excavations at Aegina conducted by Stais[8] fragments of the Mycenaean style were extremely scarce, but large quantities of Geometric and Argive (so-called Proto-Corinthian) ware were found. Moreover, all the Geometric ware found there resembles that from the Heraeum much more closely than that from Attica, and several types occur which can be duplicated only at Argos. It is also most probable that most of the vases of the Geometric and Argive styles found at Aegina were imported, not manufactured there. As Argos, through the Mycenaean as well as the later periods, was one of the chief centres for the manufacture of vases, it becomes almost certain that after the Mycenaean period she exported her wares into Aegina.[9] Whether Phidon or

[1] Dr. Waldstein believes that there was here a primitive settlement to which primitive cooking-pots, etc., would belong See General Introduction, vol. i.

[2] For discussion on this point cf. Cecil Smith, *Naukratis*, I. p. 47; Furtwängler, Introduction to Genick, *Griechische Keramik*, p. 5.

[3] *History of Greece*, I. p. 205.

[4] *Ἐφημ. Ἀρχ.*, 1895, p. 236.

[5] *Griechische Geschichte*, I. p. 282.

[6] Cf. Head, *Historia Numorum*, Introduction, p. 38.

[7] *Op. cit.* I. p. 214, Note 3.

[8] *Loc. cit.* and Pallat, *Athen. Mitt.* XXII. (1897), pp. 265 ff.

[9] As the question of the origin of such styles as the Mycenaean, Geometric, Argive (so-called Proto-Corinthian), and Corinthian, which are found in Aegina, Argos, and Attica could not be settled with positive certainty from the outward appearance of the fragments themselves, a microscopical analysis of the clay by an expert geologist seemed to offer the only solution of the difficulty. Accordingly I sent to Dr. H. S. Washington a number of sherds of the Primitive, Mycenaean, Geometric, Argive (Proto-Corinthian), Corinthian, Black and Red-Figured styles selected from the following sites: the Heraeum, Mycenae, Tiryns, Nauplia, Melos, Attica (Athens, Menidi, Markopoulo, Thorikos), and Eretria. His report is to appear elsewhere, but we may here mention the following facts quoted from Dr. Washington's letter, which were given in reply to the following questions: (1) What is the connection between pottery found at Argos and Aegina? (2) What is the connection between pottery found at Attica, Argos, and other sites?

(1) "The primitive fragment from Aegina is coarse and contains fragments of mica-schist. As this rock is not found on the island, the presumption is that this especial piece is of foreign (i. e. extra-Aegina) manufacture. In the Peloponnesus the nearest localities of these rocks are in the Xiris mountains, and near and south of Doliana towards Sparta; they also occur in Attica. The Geometric fragments of Aegina are coarse with quartz and feldspar grains, possibly derived from schist, but no remains of this or of volcanic rock are visible; it may be native. The two Mycenaean fragments from Aegina are rather coarse, and show fragments of quartz, feldspar, and augite (a mineral of volcanic rocks on the island), so that these are almost certainly of native (Aeginetan) manufacture.

"The Proto-Corinthian and Corinthian fragments from Aegina do not differ in any essential respect from the corresponding specimens of Argos. The Proto-Corinthian are much finer than the Corinthian, and I should say that the Aegina Corinthian are rather coarser than the Corinthian fragments found at Argos.

"Of the Argive specimens, the Proto-Corinthian are by far the finest, though the Corinthian come close to them. A fragment of a 'local type' (v. p. 161, PLATE LXVII.) is also dense, as are two of the red-figure style. A primitive fragment is also quite fine, but shows carelessness in manufacture in areas of coarser material and in the presence of limestone fragments. The fragment of the Geometric plate (v. p. 116, PLATE LVIII.) resembles the corresponding one from Aegina, and may possibly contain a little augite (in very small crystal fragments), which would indicate an Aeginetan derivation. All the Geometric fragments are coarser than the Proto-Corinthian, but the Mycenaean are rather better, though less dense, than the Proto-Corinthian.

"On the whole, the only pottery which is, one may say, undoubtedly Aeginetan is the Mycenaean from there, the Argive Mycenaean being distinctly different. There is practically no difference between the respective Proto-Corinthian and Corinthian, and either might come from any good clay bed, and with the material well washed, which would tend to eliminate all heavy portions such as augite.

(2) "Argive, Attic, etc. The fragments of the Mycenaean style from Mycenae, Tiryns, Daulis, Markopoulo, and Nauplia are all practically identical with that of Argos. The Geometric fragments from Markopoulo and Eretria are coarser and resemble the Geometric from Argos. The only specimen from Athens (Dipylon) is also coarse, and contains much feldspar, an evidence of carelessness in washing.

"The pottery from Melos is quite distinctive in containing fragments of minerals of volcanic rocks of the island, as well as here and there fragments of the rocks themselves, such as obsidian, etc."

"Pottery is made of decayed rocks in which most of the original and distinctive minerals have disappeared, and those left are still further done away by the washing of the clay, so that it would be only in the most early and archaic periods that we should expect to find tell-tale minerals."

Although Dr. Washington's report is somewhat inconclusive, the following conclusions would seem to be justified: (1) That with the exception of a few fragments of the Mycenaean style and the Geometric plate mentioned on p. 116, none of the sherds of the Geometric, Argive (Proto-Corinthian), or Corinthian styles are indigenous to the island, but were most probably imported there. (2) The Geometric fragments from Attica, except the pure Dipylon style, resemble very strongly those from Argos. But these same conclusions do not seem to militate against the theories advanced on pp. 119 ff. and 103 ff., that the Argive (Proto-Corinthian) style originated in the Argolid, and that the earliest beginnings of the Geometric style proper are to be sought for in that locality, although, as stated on p. 104, no attempt has been made to prove that the Geometric style necessarily originated in the Argolid, and was taken up by the other states, but rather that the external influence which probably created the Geometric style first made its appearance in Argos, and penetrated into Attica in a very short time.

some other man was ruler of Argos at that time is not essential to the argument, but it would seem that Holm and Stais are right in considering him king of Argos and assigning to him a date in the first half of the eighth century. That this connection lasted until the sixth century, when the Argives assisted the Aeginetans in repelling an Athenian invasion,[1] the presence of the vase fragments at Aegina would seem to show.

So far as can be judged from the extremely small number of fragments of vases of foreign (i. e. outside of the Argolid) make, such as Dipylon, Early Attic, Corinthian, Cyrenean, Attic Black and Red-Figured, etc., it seems probable that almost all the rest were made in the Argolid. Without doubt all fragments belonging to the Mycenaean style were of such origin. This I judge from the fact that all such vases bear the closest relation to those from Mycenae and show none of the features characteristic of other Mycenaean types

[1] Herod. V. 87 ff.; cf. also chapter VII., below.

such as Theran, Cypriote, and those from the various islands. At the same time, the complete absence of the first class, lustrous finish of the Mycenaean style, would seem to exclude Mycenae itself as the only factory. With such a large output of Mycenaean vases there must have existed a dozen vase factories scattered through the plain.

Though it is a point that admits of much discussion, I am inclined to follow Furtwängler and Loeschcke's view that the Dorian invasion proved the downfall of the Mycenaean civilization, and that the Geometric style arose in consequence of this invasion[1] and cannot be traced to the Ionians, Carians,[2] or Egyptians.[3] This point will be further elaborated in the third chapter, but we may anticipate a little. It is only recently that the connection between the Mycenaean and Geometric styles has been satisfactorily established. Wide[4] has analyzed the survival of Mycenaean elements in the Geometric style and shown how much more the Island types of the Geometric followed the Mycenaean than those of the mainland, but his assumption that, owing to the lack of these Mycenaean features in the Geometric style of the mainland, the centre of the Mycenaean fabrics lay in the islands is not necessarily true, since these same features can be detected in the Geometric vases from the Heraeum.

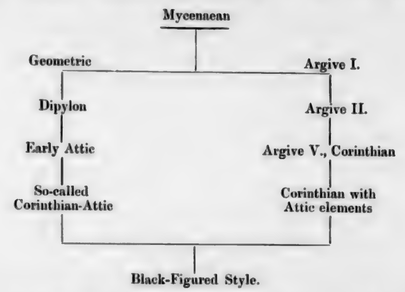
The recent excavations of Flinders Petrie in Egypt, Cecil Smith and Hogarth in Melos, and Evans in Crete have thrown new light on the beginnings of the Mycenaean style, since a large number of sherds have been found there which, though akin to the Mycenaean, are nevertheless earlier, and have been called "Aegean." These sherds would seem to show a greater tendency towards a naturalistic or pictorial form of ornamentation than towards a linear. As yet the connection between them and the Mycenaean sherds of Greece proper has not been thoroughly established, but it may be assumed that such a connection exists.

The Mycenaean style in Greece proper would seem to show the following development. As Professor Waldstein has already pointed out, the earliest Mycenaean fragments show the embodiment of a Linear principle which would naturally be expected in vases which succeed the so-called "Primitive" style. In a very short time, owing no doubt to the maritime character of the Mycenaean civilization, and more probably to the influence of the Aegean pottery, the tendency to employ a species of pictorial or naturalistic ornamentation, especially of marine life, became widespread.

Later again the spirit of conventionality crept in, and in the last days of the Mycenaean style we find a wealth of ornament treated in a purely conventional and rather flamboyant manner, but without the introduction of any fresh ideas; in fact, the general tendency seems a return to the early Linear feeling. After the Dorian invasion we see this same linear principle marching off in two different styles, the Geometric and the Argive or Proto-Corinthian, which flourished side by side in the Argolid for a considerable period. During the seventh century the increasing commercial and trading facilities brought about the introduction of foreign, especially eastern influences, into Greece, with the result that the Geometric style died out, while the Argive absorbed the new influences, from which the Corinthian style probably had its origin (see p. 123). Attica in the meanwhile, after experimenting largely with the Geometric style, had worked her way into the Early Attic style, and after absorbing the Oriental influence from Corinth through the so-called Corinthian-Attic, evolved the Black-Figured style which, during the best part of the sixth century, was the most prominent form of Greek ceramic art.

[1] *Myk. Vas.* p. xii.
[2] Rayet and Collignon, *Hist.* p. 32.
[3] Kroker, *Jahrb.* I. (1886), pp. 95 ff.
[4] *Athen. Mitt.* XXII. (1897), pp. 233 ff. and XXI. (1896), pp. 385 ff.

A glance at the accompanying figure shows the way in which this development took place, and how the elementary principle, starting from the Mycenaean style, and working its way through two separate channels, united again in the Attic Black-Figured style.



It cannot, of course, be said that the progress traced above is absolute, nor can it be worked out exactly with mathematical precision. It is the result of a careful study of the progress of ceramic art as illustrated by the two great centres of Argos and Athens, with especial reference to the vases from the Heraeum. To trace the development of ceramic art in any given place is, after all, largely a matter of theory, and though I do not wish to maintain that the theories of development here expressed are the only ones possible, it is upon them that the whole of this work is based.

As the term "Proto-Corinthian" is now so thoroughly unsatisfactory, I fully agree with Professor Waldstein that it should be abandoned, and that, as the Argolid offers greater claims for being the home of this style (as I shall endeavor to show later), it is best to call the style Argive. But, as stated before, the use of the term in this part of the publication is rather more restricted than that employed by Professor Waldstein, since it is here used entirely with reference to those vases which are post-Mycenaean, and does not include all the varieties which Professor Waldstein would include under the title of "Argive Linear."

CHAPTER I.

PRIMITIVE VASES.

The pottery representing the "primitive" period, i. e. all pottery (prior to the Mycenaean civilization) which shows the employment of the usual incised linear decoration, so common on the various sherds in the lower settlements of Hissarlik, is rather scarce at the Heraeum. For this fact two explanations are possible: (1) As we have pointed out before, a large number of fragments, without decoration of any kind, wheel or hand made, which might well belong to vessels of the earliest periods, were not preserved, since there was no evidence of any kind to show what their age was. (2) Sites in which such ware has been found in greatest quantities, such as Hissarlik, Tiryns, Thera, etc., were all settlements where the pottery was in actual use by the inhabitants. The Heraeum was a sanctuary and not a settlement; and as the cult of Hera was probably not developed until the Mycenaean period, the custom of dedicating pottery would not have been general, and hence we should not expect to find many primitive sherds on the site. If, however, there had been here an early settlement, vases would have been in constant use, and would therefore not have been found in large quantities, as where in a sanctuary only there were constant deposits of votive offerings in vases.

Of the plain pottery already mentioned in the Introduction, a great number of fragments seem to have belonged to large *pithoi*, similar to those at Hissarlik. Such large vases, of coarse unpainted clay, are characteristic of all periods, and may just as well fall in the later as in the earlier Greek times. Many of them, in fact, are not dissimilar to common pots used by the people of Greece to-day.

The bulk of this "primitive" ware consists of fragments of yellow or reddish clay with incised ornamentation, only a few vases being preserved entire. Most of the fragments are hand-made; but as wheel-made ones are found, no general law can be stated for the use of the wheel. It is probable that some of the wheel-made prehistoric fragments are older than hand-made Mycenaean vases. Beside the fragments already mentioned, a large number of very coarse wheel-made fragments were found, decorated only with a series of incised parallel lines very close together, evidently made by some pointed instrument held against the clay as it revolved on the wheel. To date them is impossible; the nearest analogies may be found in Phoenician ware in the British Museum and the Louvre.[1]

Not more than two baskets of the total number contained sherds with incised decoration, and it was extremely doubtful in the case of many of the fragments whether they could with propriety be classed among the primitive vases. Some, by their similarity to the vases from Hissarlik, the tumulus at Bos-öjük in Asia Minor (Koerte, *Athen. Mitt.* xiv. (1899), pp. 1 ff., pls. i.–iii.), and the Cyclades (Tsountas, Ἐφημ. Ἀρχ. 1898, pp. 137 ff., pls. ix., x.) seemed to belong to the last of the third or the beginning of the second millennium B. C. Probably none of them are earlier than the second settlement at Hissarlik, and the majority contemporaneous with the sherds of the third, fourth, and fifth settlements. Some, again, though essentially primitive in their technique, show Mycenaean and Geometric elements without seeming to belong to either style.

[1] Pottier, *Vases Ant. du Louvre*, pl. iv. fig. 2.

No attempt can be made to give anything but an approximate date to the fragments of the primitive period from the Heraeum. As the primitive vases from the Cyclades furnish the nearest parallels to many of our fragments, we may date them as Tsountas does the island tombs, B. C. 2500–2000; those which show a more advanced style of decoration may be placed in the first part of the second millennium B. C.; but it is doubtful if any of our fragments to which the term "primitive" can be applied are later than the beginnings of the Mycenaean civilization.

FRAGMENTS.

PLATE L.

1. Bright red clay, fairly fine. Wave pattern between bands. Cf. *Ilios*, figs. 298, 317. Koerte, *loc. cit.* pl. iii. 19.

2. Coarse dark yellow clay with small black stones, hand-made. Probably part of amphora. Handle missing. Decoration of small circles, evidently done with some instrument like a punch. To left of the handle, breast-like protuberance.

3. Reddish clay. Hand-made. Same decorations, large circles. Cf. *Ilios*, fig. 162.

4. Top of oinochoe, of fine dark reddish clay. Same decorations with very small circles, which extend over the lip.

Fragments of this type were common at the Heraeum. They possess, however, no affinity with the sieve vases from Troy, as the circles do not go clear through.

Two variations in the type occur; (1) where the circles have a central part left (as in **2**) and (2) where the circle is a complete hole. (3) Similar decoration occurs on ivory objects from Troy (*Ilios*, p. 566), as well as from the Heraeum, and on fragments from graves of the Hallstatt period in Vienna.

Nos. **5–8** are all of a yellow or reddish clay, hand-made and ornamented with scratched lines. Similar fragments were quite numerous at the Heraeum, and probably belong to the earliest period. The plastic band on 5, with its perforated ornament, is a common feature in prehistoric ware.[1] Cf. Schliemann, *Ilios*, p. 491, fig. 454.

9. Low bowl; height 0.27 m.; diameter 0.17 m. Reddish clay. Incised dots on outer edge of base. Rim has an incised herring-bone pattern. Two holes through edge of base.

10. From shoulder of large vase, coarse reddish yellow clay. Ornamentation probably ran round the shoulder like a frieze.

11. Handle of vase, coarse reddish yellow clay, hand-made. Plastic ornament resembling the knuckles of a hand.

12. Same. Coarse, dark reddish clay, hand-made; probably burnt. In plastic form, with four divisions, two large and two small.

Several other similar handles, belonging to large amphoras were found, which vases, as far as can be told from the fragments, possessed no decoration whatsoever.

13. Handle, reddish yellow clay, ornamented with a series of V-shaped incisions. Cf. *Ilios*, fig. 1000.

14. Reddish clay. Wave patterns incised in similar fashion to **1**. In left-hand corner of the fragment a projection like a button.

15[2] **a** and **b.** Bright red clay, hand-made. Base of tall jar. Around bases plastic mould-

[1] This would seem to be one of the earliest examples of a snake, which, though common in Mycenaean and later times, is probably not of Mycenaean origin; cf. *B. C. H.* xxii. (1898), p. 441, note 1; *B. C. H.* xix. (1895), p. 179, note 6.

[2] A fragment very similar to No. 15 has been found by Wide at Aphidna (*Athen. Mitt.* 1896, pp. 394, 407, pl.

ing with scratches. Above, narrow band of triangular indentations and two bands of ray pattern, incised. The same triangular indentations occur on a fragment from the Cyclades Ἐφημ. Ἀρχ. 1898, pl. ix. 10 and 23.

The following fragments are all wheel made, and belong certainly to a later time, probably just prior to the beginning of the Mycenaean period.

16. Greenish yellow clay. From base of a vase with tall foot. Double herring-bone pattern and lines, incised.

17. Greenish-yellow clay, from vase similar to **16**. Rays and bands incised.

18. Reddish clay, inside entirely covered with a dark brown glaze. Rays and scratches incised.

As the technique of this fragment is distinctly Mycenaean and rather advanced, it seems most probable that it should fall in that period.

19. Light yellow clay, probably from an aryballos. Herring-bone pattern and lozenge containing a *swastika*, incised.

20. Bright yellow clay, with black core. From neck of a vessel. Three raised bands, cross-hatched, inclosing two bands, upper with rosettes and herring-bones, lower with herring-bones alone.

21. Reddish yellow clay. From neck of aryballos. Plastic tongue pattern on shoulder.

The technique of **19**–**21** is decidedly more advanced than that of the other fragments. At the same time it is open to question whether, with the possible exception of **21**, they can be regarded as later than the Mycenaean period.

VASES.

1. (Fig. 1.) Three-legged bowl, two of the feet restored. Hand-made; height, 0.092 m.; diameter of opening, 0.08 m. Black clay with brick-red slip, burnt dark brown. Scratched ornamentation on rim, neck, and belly. The handle is divided into two twisted divisions, also ornamented with scratches. On the front, two breast-like protuberances.



Fig. 1.

This arrangement of scratches is similar to that of Ἐφημ. Ἀρχ. 1898, pl. x. No. 1, but not so regular, and is undoubtedly earlier. The shape is similar to *Ilios*, Figs. 59 and 1130. (Cf. also Koerte, *loc. cit.* pl. ii. 9.) Such vessels have usually been classed among cooking-pots.

2. (Fig. 2.) Vase with long neck, without handle; height, 0.07 m. Black clay, polished and burnt. The shape of our vase is similar, though a trifle more advanced, to a vase from the same place. Cf. Koerte, *loc. cit.* pl. ii. 8.



Fig. 2.

The polishing of the clay is a common feature among primitive vases. It may be observed on a large number of vases and sherds from Hissarlik, and also on the vases from Bos-öjük. Cf. Koerte, *loc. cit.* p. 25.

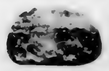


Fig. 3.

3. (Fig. 3.) Oinochoe? Neck and handle missing: height, 0.025 m. Black clay, burnt, with incised border on shoulder. Shape of vase cannot be determined, but it rather recalls the latter oinochoe type. Similar decoration may be found on a Trojan vase of the fourth settlement. Cf. also, Ἐφημ. Ἀρχ. 1899, pl. ix. 24.

xv. 3), and assigned by him to his early indigenous Geometric class. This would seem significant for dating our fragment, and also for showing that the pre-Dorian elements in the Geometric style in Attica are to be found in the Argolid. This point will be discussed more thoroughly in Chapter III.

Further, about twenty very small hand-made vases were found, which had no decoration, but were uniformly of a dark gray or reddish clay, showing traces of burning. They included two-handled vessels, similar to Ἐφημ. Ἀρχ. 1898, pl. ix. 2, and Koerte, *loc. cit.* pl. ii. 7; several three-handled jugs of similar shape to those on p. 100, and a vase without handles, similar to Koerte, *loc. cit.* pl. ii. 9.

A series of vases, which, though not prehistoric in character, seem more nearly related to the earlier than the later vases, is represented by **4**–**6**. They are all of a very dark clay, hand-made and burnt black in most cases, some with a decoration of incised lines running from neck to foot, others without decoration, and chiefly remarkable for a very brilliant polish, giving nearly the effect of dull jet. These vases are very similar to several from Rhodes in the British Museum, and it may be questioned whether our vases are not as are those, a product of the eighth century. At the same time, owing to their scratched ornamentation, they are more fitly included in this chapter, and if of a later date are probably the last links of the chain begun in prehistoric times.

4. (Fig. 4.) Aryballos; height, 0.045 m. Black clay, burnt, with decoration of parallel lines. Much of the outer surface worn off.

Several others were found at the Heraeum. An aryballos precisely similar is in the British Museum (A. case 6, No. 658, from Rhodes).



Fig. 4.



Fig. 5.



Fig. 6.

5. (Fig. 5.) Aryballos; height, 0.034 m. Black clay, with very brilliant polish. Below handle parallel scratches and a figure shaped like a bow or a crescent.

6. (Fig. 6.) Oinochoe; height, 0.045 m. Black clay, polished and burnt, without ornamentation. Several similar jugs were found.

CHAPTER II.

THE MYCENAEAN STYLE.

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The two great classes of the Mycenaean style, vases with dull decoration (*Mattmalerei*) and with lustrous decoration (*Firnissmalerei*), are both represented at the Heraeum, the former in very small quantities. Although it is usually supposed that "dull" vases are

ing with scratches. Above, narrow band of triangular indentations and two bands of ray pattern, incised. The same triangular indentations occur on a fragment from the Cyclades Ἐφημ. Ἀρχ. 1898, pl. ix. 10 and 23.

The following fragments are all wheel made, and belong certainly to a later time, probably just prior to the beginning of the Mycenaean period.

16. Greenish yellow clay. From base of a vase with tall foot. Double herring-bone pattern and lines, incised.

17. Greenish-yellow clay, from vase similar to **16**. Rays and bands incised.

18. Reddish clay, inside entirely covered with a dark brown glaze. Rays and scratches incised.

As the technique of this fragment is distinctly Mycenaean and rather advanced, it seems most probable that it should fall in that period.

19. Light yellow clay, probably from an aryballos. Herring-bone pattern and lozenge containing a *swastika*, incised.

20. Bright yellow clay, with black core. From neck of a vessel. Three raised bands, cross-hatched, inclosing two bands, upper with rosettes and herring-bones, lower with herring-bones alone.

21. Reddish yellow clay. From neck of aryballos. Plastic tongue pattern on shoulder.

The technique of **19**–**21** is decidedly more advanced than that of the other fragments. At the same time it is open to question whether, with the possible exception of **21**, they can be regarded as later than the Mycenaean period.

VASES.

1. (Fig. 1.) Three-legged bowl, two of the feet restored. Hand-made; height, 0.092 m.; diameter of opening, 0.08 m. Black clay with brick-red slip, burnt dark brown. Scratched ornamentation on rim, neck, and belly. The handle is divided into two twisted divisions, also ornamented with scratches. On the front, two breast-like protuberances.



Fig. 1.

This arrangement of scratches is similar to that of Ἐφημ. Ἀρχ. 1898, pl. x. No. 1, but not so regular, and is undoubtedly earlier. The shape is similar to *Ilios*, Figs. 59 and 1130. (Cf. also Koerte, *loc. cit.* pl. ii. 9.) Such vessels have usually been classed among cooking-pots.

2. (Fig. 2.) Vase with long neck, without handle; height, 0.07 m. Black clay, polished and burnt. The shape of our vase is similar, though a trifle more advanced, to a vase from the same place. Cf. Koerte, *loc. cit.* pl. ii. 8.

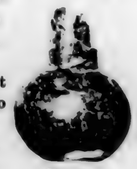


Fig. 2.

The polishing of the clay is a common feature among primitive vases. It may be observed on a large number of vases and sherds from Hissarlik, and also on the vases from Bos-öjük. Cf. Koerte, *loc. cit.* p. 25.



Fig. 3.

3. (Fig. 3.) Oinochoe? Neck and handle missing: height, 0.025 m. Black clay, burnt, with incised border on shoulder. Shape of vase cannot be determined, but it rather recalls the latter oinochoe type. Similar decoration may be found on a Trojan vase of the fourth settlement. Cf. also, Ἐφημ. Ἀρχ. 1899, pl. ix. 24.

xv. 3), and assigned by him to his early indigenous Geometric class. This would seem significant for dating our fragment, and also for showing that the pre-Dorian elements in the Geometric style in Attica are to be found in the Argolid. This point will be discussed more thoroughly in Chapter III.

Further, about twenty very small hand-made vases were found, which had no decoration, but were uniformly of a dark gray or reddish clay, showing traces of burning. They included two-handled vessels, similar to Ἐφημ. Ἀρχ. 1898, pl. ix. 2, and Koerte, *loc. cit.* pl. ii. **7**; several three-handled jugs of similar shape to those on p. 100, and a vase without handles, similar to Koerte, *loc. cit.* pl. ii. 9.

A series of vases, which, though not prehistoric in character, seem more nearly related to the earlier than the later vases, is represented by **4**–**6**. They are all of a very dark clay, hand-made and burnt black in most cases, some with a decoration of incised lines running from neck to foot, others without decoration, and chiefly remarkable for a very brilliant polish, giving nearly the effect of dull jet. These vases are very similar to several from Rhodes in the British Museum, and it may be questioned whether our vases are not as are those, a product of the eighth century. At the same time, owing to their scratched ornamentation, they are more fitly included in this chapter, and if of a later date are probably the last links of the chain begun in prehistoric times.

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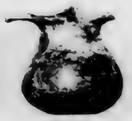


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older than "lustrous," certainty on this point is impossible. The character of the dull style is linear and as such more in keeping with the prehistoric motives; also as the invention of a lustrous glaze is a distinct innovation in ceramic art, it is probably an improvement on the "dull" technique. But that the manufacture of dull vases continued almost as long as that of lustrous vases, is proved by the fact that both dull and lustrous fragments lay side by side in the same levels.

VASES WITH DULL DECORATION.

Four small vases (to be described later) and about fifty fragments of this style were found, none belonging to very large vases. To establish a classification with a material so scanty and unsatisfactory is impossible. Furtwängler and Loeschcke divide this type into two classes: (*a*) vases made of red clay ("Rotthonig") and (*b*) vases of pale clay ("Blassthonig"). Such a classification in the case of the Heraeum fragments proved impossible, since the clay ran through the various shades of red, yellow, gray, and green, and no vital difference in the decorative forms of fragments of red or pale clay could be distinguished, and the polish, according to Furtwängler and Loeschcke, a characteristic feature of class *a*, was noticeable only on vases of pale clay.

It is true that the majority of our dull fragments show a decoration decidedly linear in feeling, and also that some show a pictorial or naturalistic decoration very similar to vases of the lustrous style. That the first are the earlier of the two seems probable. At the same time the difference is not so great as to warrant our assigning the fragments to different classes, since many fragments bearing linear motives may well have belonged to vases which also showed pictorial ornamentation and *vice versa*. The classification of fragments alone is far more unreliable than that based upon entire vases. Hence, in the case of "dull" fragments, no attempt has been made to separate them into two classes, though they have been arranged with a view to the character of their ornamentation, be it linear or pictorial.

Only the most important fragments are shown in PLATE LI. There were many which bore no decoration, though clearly belonging to the same vases as some of the fragments here reproduced; many again bore only a part of a band or stripe running around the belly. A certain difference can be detected in that in some of the fragments the clay is covered with a fine slip and in some not. The majority of the fragments show this feature, which seems to have been a characteristic of the style from its beginning, since even those vases with the simplest linear decoration show it. As it runs through all the shades of clay, it offers no ground for classification. The polishing of the surface seems to have been the general custom. The clay runs through all varieties and colors, from a very coarse variety with black stones still apparent on the surface to extremely fine clay, cleaned and polished. The majority of the vases and fragments were made on the wheel, though a few are hand-made.

FRAGMENTS.

PLATE LI.

1. From bowl with large opening. Form, *Myk. Vas.* XLIV. 48: height, 0.165 m.; width, 0.125 m. Coarse pale greenish clay, polished on outside and inside. On inner part of rim series of three short parallel dashes. Decoration in black, faded. Cf. *Myk. Thong.* IV. 17.

2. From one-handled-cup. Form, *Myk. Vas.* XLIV. 98: width, 0.118 m.; height, 0.068 m. Coarse brownish yellow clay with whitish yellow slip on exterior. Dashes on rim similar to **1**. In rim hole pierced for suspension. Black decoration.

3. Lip and handle of bowl similar in shape to **1**: width, 0.112 m.; height, 0.095 m.

4. Neck and shoulder of jug. Form, *Myk. Vas.* XLIV. 20: height, 0.105 m.; width, 0.125 m. Coarse reddish yellow clay; yellowish slip with decoration in violet brown. Cf. *Myk. Thong.* IV. 13.

5. Reddish yellow clay, fairly fine in texture. Pale slip on exterior with violet black decoration. Cf. Ἐφημ. Ἀρχ. 1899, plate viii. 104 (vase from Syra).

6. Neck and shoulder of jug similar to **4**. Fine reddish clay with greenish yellow slip.

7. Fairly fine pale reddish clay, dull polished surface. Three narrow black bands inclosing a dark red zigzag, and a broader band of dark red; traces of another zigzag also in dark red. This fragment is almost identical with *Myk. Thong.* V. 20.

This use of two different colors, one (in this case the red) added after the first firing, is an extremely common feature in the Heraeum fragments, and will be analyzed more thoroughly in a later chapter. No. **7** was the only fragment of the dull finish which showed its employment.

A few fragments of a very dark red clay with a dark red slip on exterior and interior and black decoration were found. They are in all respects similar to the vase from the Bee-Hive tomb near the Heraeum. Cf. *Myk. Thong.* XII. 52; *Athen. Mitt.* III. p. 271.

8. Neck, shoulder, and base of handle, probably from an amphora. Fine greenish clay, polished, with light brown decoration.

9. From large bowl, similar in form to *Myk. Vas.* XLIV. 75, but with single handles, about 25 cm. in height and 24 cm. in diameter. Coarse reddish clay, which has received a very high polish and presents a peculiar soapy feeling to the touch. Zigzag band below rim in dark red, very much faded. (**Fig. 7**.)



FIG. 7.

A few other vases and fragments from the Heraeum showed this same peculiar surface, which otherwise is unknown to me. It is probably due to some accident either in the composition of the clay or the peculiarity of the soil in which it is found.

10. Coarse brownish clay with white slip outside. Violet brown decoration.

All these fragments show a decided "linear" tendency; the rest (**10**–**16**) are more naturalistic in character. The similarity of decoration in **14**–**16** to vases of the lustrous finish would warrant our assigning them to a later period. They evidently do not belong to the earliest essays in dull decoration.

11. Shoulder and handle of small three-handled amphora (form *Myk. Vas.* XLIV. 35), with brown black decoration.

12. Rim and spout (broken off) of a bowl, similar in shape to *Myk. Vas.* XLIV. 103. Very coarse brick red clay, with a pale white slip on exterior and interior. Decoration in black, laid on heavily and badly worn.

13. Shoulder of small jug. Similar technique to **11** and **12**.

14. Spiral in black.

15. Rim of bowl. Fine brick red clay, with bright yellow slip, highly polished; decoration in violet brown.

This fragment, from the excellence of its technique, as well as the form of the spiral, is clearly synchronous with vases of the best period of the lustrous style.

16. From bowl similar to **15**. Greenish clay, with brown decoration. Technique similar to vases of the later (not the best) lustrous style.

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VASES.

17. (Fig. 8.) Height, 0.06 m.; diameter, 0.07 m. Bowl with high foot, being a cross between a kylix and a skyphos, one handle missing. Bands and a continuous spiral.

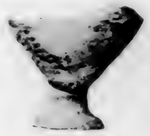


FIG. 8.

Another vase of exactly the same shape and dimensions, but intact, was found in the same tomb. The surface is completely covered by a hard incrustation of lime, but as far as can be seen the decoration is the same as **17**.

18. (Fig. 9.) Height, 0.028 m.; diameter, 0.066 m. Slight variation of *Myk. Vas.* XLIV. 87. Bands on rim, belly, and handle, and row of dotted semicircles.

19. (Fig. 10.) Height, 0.036 m.; diameter, 0.056 m. Three-legged bowl, handle restored. Continuous spiral on sides, and on bottom between the legs a design like an S reversed. Clay shows traces of burning.



FIG. 9.

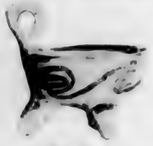


FIG. 10.

These four vases come from the grave found April 13, 1894, back of the peribolos wall above the South Stoa. The technique is the same in all, a fine yellow clay, highly polished, without a slip, the decoration in violet black, laid on heavily. All are handmade. For photograph of tomb see vol. I. p. 41, fig. 13.

VASES WITH LUSTROUS DECORATION.

The introduction of lustrous paint in the manufacture of Mycenaean vases was revolutionary in its effects. Henceforth all vases exhibit this feature. But as we have said, on its introduction the dull finish was not at once abandoned, but continued side by side with the lustrous technique for a considerable period; just how long it is impossible to say, but certainly until after the best period of the lustrous style.

Until lately Furtwängler and Loeschcke's division of the lustrous style has been universally followed. This classification has, however, proved inadequate for our vases, and for those from the Acropolis and Thoricus. A second classification,[1] proposed by Wolters, is more satisfactory, and has proved a better standard for arranging ours. But in spite of its many advantages, it is somewhat unwieldy, so that I have ventured to adopt a middle course, in order to reconcile both Furtwängler and Loeschcke's and Wolters' arrangements. The three are here presented side by side.

FURTWÄNGLER AND LOESCHCKE.	WOLTERS.	HOPPIN.
I.	I.	I.
Wheel-made vases of a very coarse clay, entirely covered with a fairly dull black slip, on which the ornamentation is thinly laid in white and dark red. This class was chiefly found in graves iv. and v. at Mycenae, at Tiryns, and at Thera.	The same. Only a few fragments of this style were found on the Acropolis.	The same. This class is not found at the Heraeum at all.

[1] This classification has never been published, so far as I know, and has been drawn from the author's lectures.

II.	II.	II. 1 and 2.
Vases of coarse clay, covered with a thin slip of finer clay, now white (in the case of vases from the Bee-Hive tomb near the Heraeum), now yellowish brown. (v. *Myk. Thong.* VII. 42; *Myk. Vas.* p. 21, fig. 7.) The decoration is painted on this slip in dark brown, with the occasional addition of white, as if an echo of the technique of the first class.	No radical change. The main point of difference lies in the close connection between II. and the following class, which varies from it only in the quality of the work. The style throughout is distinctly a naturalistic or pictorial one, there being no thought of conventionality. The vase from Thorikos is an extremely good example of the class as a whole. Cf. Ἐφημ. Ἀρχ. 1895, pl. xi. No. 1.	In the first division of II. have been included all vases which in the other two classifications are counted as II. In the second division are included a number of vases belonging to Furtwängler and Loeschcke, III., and Wolters, III. 1.
III.	III. 1.	III.
Fine cleaned clay, with a polished surface of warm yellow color. The colors in the decoration run through all shades from yellow to dark brown. This, through action of fire, becomes bright red in many cases, which, especially in vases of the finest technique, is evidently intentional. Details are occasionally added in white.	Fine clay, with purely pictorial ornamentation, precisely similar to II., save that the execution is more delicate, which is natural, seeing that the vases are uniformly smaller. 2. The pictorial motives have become conventionalized. In proportion, however, the technique has also advanced and reaches its highest point in this division, and may easily be detected by the extreme fineness of clay and extraordinary brilliancy of the glaze. This class is not the most common of the Mycenaean styles.	1. Seeing that vases of this class differ from the succeeding one only in superiority of technique, while the principle of ornamentation remains the same, there seems to be little gain in separating them by the boundary line of a class. 2. In this division are included those vases which form the bulk of III. of Furtwängler and Loeschcke. They are the most common at the Heraeum. The clay has become inferior and the lustre duller, while the ornamentation has become conventionalized in the extreme, and presents a certain mechanical air. It is only in its technical features that it differs from class III. 1.

VASES.

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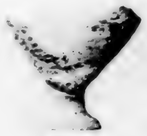


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Fig. 9.



Fig. 10.

These four vases come from the grave found April 13, 1894, back of the peribolos wall above the South Stoa. The technique is the same in all, a fine yellow clay, highly polished, without a slip, the decoration in violet black, laid on heavily. All are handmade. For photograph of tomb see vol. I. p. 41, fig. 13.

VASES WITH LUSTROUS DECORATION.

The introduction of lustrous paint in the manufacture of Mycenaean vases was revolutionary in its effects. Henceforth all vases exhibit this feature. But as we have said, on its introduction the dull finish was not at once abandoned, but continued side by side with the lustrous technique for a considerable period; just how long it is impossible to say, but certainly until after the best period of the lustrous style.

Until lately Furtwängler and Loeschcke's division of the lustrous style has been universally followed. This classification has, however, proved inadequate for our vases, and for those from the Acropolis and Thoricus. A second classification,[1] proposed by Wolters, is more satisfactory, and has proved a better standard for arranging ours. But in spite of its many advantages, it is somewhat unwieldy, so that I have ventured to adopt a middle course, in order to reconcile both Furtwängler and Loeschcke's and Wolters' arrangements. The three are here presented side by side.

Furtwängler and Loeschcke.	Wolters.	Hoppin.
I.	I.	I.
Wheel-made vases of a very coarse clay, entirely covered with a fairly dull black slip, on which the ornamentation is thinly laid in white and dark red. This class was chiefly found in graves iv. and v. at Mycenae, at Tiryns, and at Thera.	The same. Only a few fragments of this style were found on the Acropolis.	The same. This class is not found at the Heraeum at all.

[1] This classification has never been published, so far as I know, and has been drawn from the author's lectures.

II.	II.	II. 1 and 2.
Vases of coarse clay, covered with a thin slip of finer clay, now white (in the case of vases from the Bee-Hive tomb near the Heraeum), now yellowish brown. (v. *Myk. Thong.* VII. 42; *Myk. Vas.* p. 21, fig. 7.) The decoration is painted on this slip in dark brown, with the occasional addition of white, as if an echo of the technique of the first class.	No radical change. The main point of difference lies in the close connection between II. and the following class, which varies from it only in the quality of the work. The style throughout is distinctly a naturalistic or pictorial one, there being no thought of conventionality. The vase from Thorikos is an extremely good example of the class as a whole. Cf. Ἐφημ. Ἀρχ. 1895, pl. xi. No. 1.	In the first division of II. have been included all vases which in the other two classifications are counted as II. In the second division are included a number of vases belonging to Furtwängler and Loeschcke, III., and Wolters, III. 1.
III.	III. 1.	III.
Fine cleaned clay, with a polished surface of warm yellow color. The colors in the decoration run through all shades from yellow to dark brown. This, through action of fire, becomes bright red in many cases, which, especially in vases of the finest technique, is evidently intentional. Details are occasionally added in white.	Fine clay, with purely pictorial ornamentation, precisely similar to II., save that the execution is more delicate, which is natural, seeing that the vases are uniformly smaller.	
	2.	1.
	The pictorial motives have become conventionalized. In proportion, however, the technique has also advanced and reaches its highest point in this division, and may easily be detected by the extreme fineness of clay and extraordinary brilliancy of the glaze. This class is not the most common of the Mycenaean styles.	Seeing that vases of this class differ from the succeeding one only in superiority of technique, while the principle of ornamentation remains the same, there seems to be little gain in separating them by the boundary line of a class.
		2.
		In this division are included those vases which form the bulk of III. of Furtwängler and Loeschcke. They are the most common at the Heraeum. The clay has become inferior and the lustre duller, while the ornamentation has become conventionalized in the extreme, and presents a certain mechanical air. It is only in its technical features that it differs from class III. 1.

IV.

The surface of the clay is greenish or a somewhat dull yellow, occasionally reddish yellow, but far duller than the preceding class. The decoration is black or yellowish brown, occasionally burnt red, but never attains to the brilliancy of vases of class III. In the case of vases with a wide mouth, the interior is always glazed.

IV.

1.

In this division are placed those vases included by Furtwängler and Loeschcke in III., and by me in III. 2.

2.

In this division fall all vases in IV. of Furtwängler and Loeschcke. Vases of this type show a more florid and perhaps decadent style of decoration. The ornamentation abounds in a wealth of detail not seen in the other classes. It has been found in fairly large quantities at Athens, on the Acropolis, and at Aegina and Thoricus.

IV.

This class remains undisturbed as in Furtwängler and Loeschcke. Only a few fragments were found at the Heraeum.

It may be noticed that in Professor Wolters's classification the separation of Mycenaean lustrous vases into two great periods is hinted at, if not expressed. We may commence by drawing a sharp line between the pictorial and the conventional, since the progression from naturalism to conventionalism is a greater one than from one plane of technical skill to a higher. We may therefore keep Furtwängler and Loeschcke's four classes and separate them into two groups, I. and II., III. and IV. It will thus be seen that dividing III. and IV. into two classes each, as Wolters does, and connecting III. 1 with II., and III. 2 with IV. is somewhat awkward. Also the line between naturalism and conventionalism is not properly emphasized, since they occur in the same class, which is clearly impossible if we are to follow a classification based on ornamental development. By separating II. into two divisions we adhere to the close connection emphasized by Wolters while confining the principle of naturalism to one class.

With III. we enter upon the second or conventional group, and we divide this into two classes, III. 1 and III. 2, which correspond to Wolters's III. 2 and IV. 1. Their connection is too strong (the difference between them being purely technical) to warrant their being separated as they are by Wolters, while at the same time we are more in accord with Furtwängler and Loeschcke, except for the transferring of a small part of their class III. to II. There seems to be no valid reason for separating IV. into two groups. Certainly the difference between IV. 1 and IV. 2 (Wolters) is as great, both from a technical and ornamental standpoint, as between III. and IV. (Furtwängler and Loeschcke).

The following table will show briefly the results thus obtained: —

Furtwängler and Loeschcke.	Wolters.	Hoppin.	
I.	I.	I.	Naturalistic or pictorial style.
II.	II.	II. 1	
	III. 1	II. 2	
III.	III. 2	III. 1	Conventional style.
	IV. 1	III. 2	
IV.	IV. 2	IV.	

What the chronological differences are between these various classes it is difficult to say. According to Furtwängler and Loeschcke, I. is the oldest; but it is extremely doubtful whether any difference in time exists between I. and II. As I. is found in but few other places outside of Mycenae, it is fair to suppose that it was a style more or less local. Judging from the entire lack of this class at the Heraeum, and the fact that the style of ornamentation of II. 1, which is the oldest class of lustrous vases at the Heraeum, is practically identical with that of I., there seems good reason for supposing that the two are synchronous.

Moreover, the difference between II. 1 and the dull vases is so extremely slight that it can be detected only by a carefully trained eye, and even then cases occur where the decision is doubtful. This would show that the lustrous technique at the beginning did not differ materially from the dull, and is another point in favor of assigning II. 1 to the beginning of the lustrous style.

II. 2 differs from II. 1 mainly in the technical advance, but this advance is sufficiently apparent to enable us to see in II. 2 the successor of II. 1. The step between II. 2 and III. 1 is even greater, since the style of ornamentation has radically changed, and all motives which II. drew from the marine life that played so great a part in the maritime civilization of the Mycenaean epoch have become conventionalized and are used more with a view to their decorative effect than as an attempt to reproduce nature. Such a change could have come only during the acme of the Mycenaean epoch.

With IV. we see the point to which the bad taste of a decadent art had come. The wealth of ornamentation, elaborated from a given motive, with the introduction of foreign motives, illustrated by "Heraldic" designs and those taken from Oriental embroideries, may be accounted for by this rampant spirit of conventionalism combined with the increased commercial activity of the age.

A few words may here be said as to the latest results in dating the whole Mycenaean period. Through the numerous excavations recently conducted on Greek soil, and the corresponding increase of Greek pottery brought to light, the chronology has been worked backwards to the fourteenth century. But the excavations of Flinders Petrie[1] in Egypt, and the finding, in the towns of Illahun, Tel-el-Amarna, Kahun, and Gurob, of rubbish heaps containing large masses of "Aegaean," i. e. Mycenaean pottery, may be said to have absolutely established the date of the Mycenaean civilization, since the objects of Egyptian workmanship lying in these rubbish heaps, along with the pottery, can be dated not later than this eighteenth dynasty, *circa* B. C. 1450. Pseud-amphoras of Class III. were found in tombs of a date not later than B. C. 1300. The placing of the acme of the Mycenaean period during the fifteenth century thus accords with the hypothesis advanced by Furtwängler and Loeschcke on the basis of Egyptian wall paintings.[2] As Class IV. was not found by Petrie, we may assume that it is later than B. C. 1300; but there is no reason for assuming that the manufacture of Class III. ceased after that date. We must also allow at least a hundred years for the development of the Mycenaean style from its beginning, so that to place the manufacture of dull vases as early as the sixteenth or seventeenth centuries is permissible. We thus obtain a period of about five

[1] For a more detailed account of Petrie's results, v. *Tel-el-Amarna*, pp. 16, 17, pls. XXVI.–XXX.; *Illahun, Kahun, and Gurob*, p. 10, pls. XVII.–XXVI.; *Kahun, Gurob, and Hawara*, pl. XXVIII.

[2] *Myk. Vas.* p. XIII.

centuries from the rise of the Mycenaean style to its downfall at the time of the Dorian invasion, or whatever the upheaval was which led to its decline.

That all the vases of the Mycenaean style found at the Heraeum were manufactured in the Argolic plain, and not imported from some other centre, seems unquestionable. Whether the Argolid was the chief centre of the Mycenaean civilization or not cannot be absolutely affirmed, though the evidence seems to point to this supposition. At any rate, the amount of vases found at Mycenae, Tiryns, Nauplia, and in the various tombs throughout the plain, is so great that we can safely assert them to be of home manufacture. That Class I. is found at Mycenae and not at the Heraeum may perhaps be accounted for by a difference of taste in the two places. The Heraeum, which was one of the largest sanctuaries in Greece, must have kept several potters' factories busy to supply the faithful with the requisite vases for *ex votos*, and that certain styles should have been popular there and others not so is not extraordinary.

Several facts may be noticed in regard to our fragments which are significant. The singular uniformity of all the fragments of the Mycenaean style, both in clay and technique; the complete absence of Class I., and, lastly, the equally complete absence of any foreign variations (e. g. Theran, Melian, Cypriote, etc.) of the regular Mycenaean types. These facts would seem to indicate: (1) That the potteries which produced the ware found at Mycenae were not the same as those which produced our fragments; had such been the case it is scarcely credible that no traces of Class I. should have been found. (2) That all Mycenaean pottery found at the Heraeum was the product of one or more particular centres of activity, situated near the sanctuary. (3) That this manufactory reserved its wares exclusively for home consumption, and neither exported its product or imported similar wares. This last assumption is based on the fact that those particular varieties which are indigenous to some foreign spots are hardly represented at the Heraeum, and the few exceptions to this rule are probably accidental. On the other hand, no Mycenaean vase found outside of the Argolid can be proved to have been manufactured near the Heraeum.

CLASS II., DIVISION 1.

Of this class only a few dozen fragments were found, and no whole vases. Only a few fragments clearly belonged to the same vases, and the reconstruction of any vase proved impossible. The characteristics of these fragments are similar to those of a jug in Athens (*Myk. Vas.* p. 49, fig. 29) and a three-handled vase from Thoricus (Ἐφημ. Ἀρχ. 1895, pl. xi. 1), though the decoration is extremely simple and monotonous, with no attempt at any elaborate design.

Only a few of the fragments are here reproduced. The technical features are: very coarse quality of clay, with frequent small stones, varying through the different shades of red and brown to green; a thin wash of white, yellow, or red; ornamentation in violet, brown, or red.

1. (Plate LI. 17.) From belly of vase, form uncertain. Dark red clay, with a darker central core, and light red wash, dark red decoration. Two fishes advancing towards a monster of some sort whose head and forelegs alone are visible. To identify the character of the fishes or the monster is impossible. Cf. *Myk. Vas.* x. 63, xxxix. 401a; Schliemann, *Mycenae*, Fig. 317; Imhoof-Blumer and Keller, *Tier und Pflanzenbilder*, vi. 47, 48, vii. 3.

2. (Plate LI. 18 a–d.) Four fragments from same vase, form uncertain, clay dark red, white wash, with faded violet brown decoration. The design cannot be restored, but that the spiral formed part of it is certain.



Fig. 11.

3. (Plate LI., 19 a and b.) Two fragments of same vase. Thick brown clay, yellow wash, brown decoration. Flower pattern.

4. (Plate LI., 20.) Greenish clay and wash, violet black decoration, with a greenish tinge. Flower pattern.

5. (Plate LI., 21.) Brown clay, with yellow wash.

6. (Fig. 11.) Fragment of large amphora: height, 0.108 m.; width, 0.12 m.; very coarse brick red clay, pale reddish wash, dark red decoration. (Flower pattern.) The height of the amphora cannot be determined, but the opening measured certainly 13 cm. in diameter. Cf. *Myk. Vas.* xxi. 156.

CLASS II., DIVISION 2.

The fragments of this particular class were far more numerous than those of the preceding, and are uniformly of a finer character, though the pictorial style of ornamentation remains the same. They represent throughout smaller vases. The clay is of a better quality, carefully cleaned, running through all the shades of red, brown, yellow, and pale green, the decoration generally red or brown. The technical method is the same in all. Over the natural clay a slip is laid, of very fine red or yellow clay, on which the design is painted and the surface polished. In some cases the slip is on the interior as well. Occasionally the decoration is laid on so thickly as to stand out from the surface of the clay, and be easily friable. Cases occur where a whitish wash has been applied, as in Class II., 1. Fragments which resemble this class very strongly have been found in the Bee-Hive tomb near the Heraeum, already referred to.

In only a few cases were fragments clearly part of the same vase and no entire vases were found. The style of ornamentation is uniformly naturalistic or pictorial, the motives being taken almost exclusively from flowers, while marine subjects are hardly used at all. In but a few instances can the form of the vase be determined.

PLATE LII.

1 a and **b**. Two fragments from the same vase, form uncertain. Reddish clay, yellow slip, red brown decoration. Flower wreath. **a** is perhaps the best example of Class II. 2 at the Heraeum. Fragments very similar have been found in Crete; v. Haussoulier, *Rev. Arch.* XL. (1880), p. 359, pl. xxiii., and more recently by Evans at Cnossus. Cf. *Arch. Anz.* 1900, p. 149, fig. 6. Cf. also *Myk. Vas.* p. 23, fig. 12, and the fragments from the Bee-Hive tomb near the Heraeum: *Myk. Thong.* xii. 64; cf. also *Myk. Vas.* xxvii. 213, 217; *A. J. A.* VI. (1890), pl. xxii.

2. Reddish yellow clay, brilliant red brown slip, red brown decoration. Two other small fragments from the same vase were found. This fragment is an exact duplicate of one from the Bee-Hive tomb; v. *Myk. Thong.* xii. 57.

3. Similar to **1** but slightly coarser clay, slip, and flaky decoration. Probably part of shoulder of a three-handled vase (form, *Myk. Vas.* xliv. 32). A similar smaller fragment, but from a different vase, was also found.

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6. Double flower. Cf. *Myk. Thong.* xii. 73; *B. C. H.* X. (1886), pl. iii. 5.

7. Rim of small bowl. Flower; similar technique to **2**.

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7. Rim of small bowl. Flower: similar technique to **2**.

8. Black border to stalks, changing to red in the centre.

9. Whitish wash on exterior, with red brown glaze on interior.

10. Part of a plate, with branches on the reverse similar to **12**. Clay has a peculiar ribbed surface.

11. Decoration ranging from brown to red. Presents same ribbed surface as **10**.

12 a and **b**. Two fragments from a vase of clay and technique similar to **8**. Cf. *Myk. Vas.* p. 58, fig. 34.

13. Rim of a large bowl. Clay rather coarse.

14. Grayish clay, evidently burnt. A few other fragments of similar technique and decoration were found. Cf. *Myk. Thong.* III. 10; *Myk. Vas.* XXI. 153, XXVI. 195.

15. Flower pattern in dark red. Polish on exterior and interior.

16. The same.

17. From shoulder of three-handled vase. Arrangement of petals similar to **1**. Cf. *Myk. Vas.* XXXVI. 376.

18. Dark core in the clay. Decoration in red.

19. From a vase of form *Myk. Vas.* XLIV. 59, probably. Whitish yellow slip. Cf. *Myk. Vas.* XIII. 89.

20. Combination of branches (watergrass, perhaps), similar to **12**, and snakes or eels.

21. Rosette.

22. Form uncertain. This fragment, as well as several others, shows a peculiar technique, the addition of a white streak to the decoration after firing, but before glazing. For similar technique, cf. *Myk. Vas.* XXVI. 203.

23. Black and red decoration. Uncertain what the complete design was.

24. From a plate. Reddish clay, with yellow slip on obverse, red on reverse. Flower pattern, the same on both sides in dark red. Cf. *Myk. Thong.* XII. 68.

25. Part of plate, with pattern similar to **3**, in flaky dark brown.

26. Greenish clay. Cf. *Myk. Thong.* III. 9.

27 a and **b**. Two fragments from the same vase. Reddish clay and decoration. Alternate buds and flowers. In spite of a certain conventionality of treatment, and indifferent technique, the resemblance of these fragments to those from Therasia (*Myk. Vas.* XII. 78) justifies their position in this class.

A considerable number of fragments representing three-handled vases similar to *Myk. Vas.* VII. 45, IX. 52, were found. This seems to have been one of the favorite shapes of this class. As a rule, ornamentation is introduced into the space above the scallops.

Fig. 12 a and **b**. Fragments of large bowl which measured 45 cm. in diameter. Form uncertain. Whether it had a foot is doubtful, so that the height cannot be estimated. Coarse reddish clay (thickness 0.012 m.), with a yellow slip, more reddish in tone on the inside. Decoration in light and dark red.



FIG. 12.

On the outside (**b**) a row of tall leaves, separated by stalks; on the inside, on rim a variety of "tongue pattern," with a milled border. In field two fishes and an eel.

This plate is perhaps the most interesting specimen of Class II., 2. The form is unknown to me in any other vase. It varies from the regular plate type in that the subject is different on the two sides. The pattern on the rim is clearly a very early instance of the "tongue pattern" so common in later vase-painting. Cf. *Myk. Vas.* XXXIV. 344. The leaf pattern on the outside is only a symmetrical arrangement of the design on *Myk. Vas.* XXXII. 314. The species of the fishes (perhaps carp) remains doubtful, but the naturalness of the drawing is an advance of No. **1** on PLATE LI.

CLASS III., DIVISION 1.

We now cross the great bridge which divides the Mycenaean style and find that the old naturalism has given place to conventionalism. But this is not the only difference between Classes II. and III.; technique itself has made great progress. The clay used is generally red or yellow in color, of a fine clear quality, carefully cleaned from impurities. The quality of the decoration is more lustrous and glossy, while in the best specimens the glaze takes on an intense brilliancy. The style of ornamentation changes, and certain motives used occasionally in the previous classes now become the favorites, such as spirals, etc. The old plant and marine motives with a few exceptions (e. g. the murex) have disappeared, and those which are now prominent are paralleled in other forms of Mycenaean art in stone and metal.

Though the conventionalism of Class III. follows the naturalism of Class II., and in this sense is a later style, we are not to assume that the manufacture of Class II. ceased. In fact there is positive proof that the two flourished side by side, since in the Bee-Hive tomb which we excavated (cf. p. 91 ff) were found vases of both classes. Such a radical change as that from naturalism to conventionalism is not the work of a day; it must have extended over a long period. But such a fact does not argue against a classification based on ornamentation, where a difference of time is not necessarily demanded.

Nor should the relation of III. 1 to III. 2 be misunderstood. We cannot regard them as two absolutely distinct and unrelated styles. I do not for a moment intend to imply that for a certain period of years Mycenaean potters continued to manufacture vases of a certain "hall-marked" excellence and then suddenly began to go down hill. What we call III. 1 is undoubtedly the best work of a certain period of Mycenaean ceramic art; III. 2 is the general average of such a period. As the best work of a given period is only a small proportion of the whole, the small amount of III. 1 compared to III. 2 bears this out. III. 1 bears the same relation to III. 2 that the work of Euphronios, Hieron, Duris, and Brygos does to the mass of red-figured vases produced in Athens prior to the Persian wars; it is the best ceramic art of the time.

The fragments reproduced on PLATE LII. are not all that were found, but the number was not large, and those represented illustrate the group. The technique of all the fragments is substantially the same, the clay red or bright yellow (more often the former), the decoration varying from red to brown, with black occasionally used and the glaze of surpassing brilliancy and fineness. The favorite ornaments seem to be the spiral and the murex.

The majority of the fragments are rims of two-handled bowls or kylixes similar in form to *Myk. Vas.* XLIV. 76, 83.

28. Rim of bowl. Decoration shades from brown to red. Part of a spiral row, spirals unconnected. Cf. *Myk. Vas.* VIII. 46.

29. Rim of one-handled bowl. Clay extremely delicate. Outer band of spiral brown, inner bands red. Cf. *Myk. Vas.* XXIX. 258. Both form and decoration seem to be the same as on the vase in Cassel. *Arch. Anz.* 1899, p. 57, fig. 1.

9. Whitish wash on exterior, with red brown glaze on interior.

10. Part of a plate, with branches on the reverse similar to **12**. Clay has a peculiar ribbed surface.

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13. Rim of a large bowl. Clay rather coarse.

14. Grayish clay, evidently burnt. A few other fragments of similar technique and decoration were found. Cf. *Myk. Thong.* III. 10; *Myk. Vas.* XXI. 153, XXVI. 195.

15. Flower pattern in dark red. Polish on exterior and interior.

16. The same.

17. From shoulder of three-handled vase. Arrangement of petals similar to **1**. Cf. *Myk. Vas.* XXXVI. 376.

18. Dark core in the clay. Decoration in red.

19. From a vase of form *Myk. Vas.* XLIV. 59, probably. Whitish yellow slip. Cf. *Myk. Vas.* XIII. 89.

20. Combination of branches (watergrass, perhaps), similar to **12**, and snakes or eels.

21. Rosette.

22. Form uncertain. This fragment, as well as several others, shows a peculiar technique, the addition of a white streak to the decoration after firing, but before glazing. For similar technique, cf. *Myk. Vas.* XXVI. 203.

23. Black and red decoration. Uncertain what the complete design was.

24. From a plate. Reddish clay, with yellow slip on obverse, red on reverse. Flower pattern, the same on both sides in dark red. Cf. *Myk. Thong.* XII. 68.

25. Part of plate, with pattern similar to **3**, in flaky dark brown.

26. Greenish clay. Cf. *Myk. Thong.* III. 9.

27 a and **b**. Two fragments from the same vase. Reddish clay and decoration. Alternate buds and flowers. In spite of a certain conventionality of treatment, and indifferent technique, the resemblance of these fragments to those from Therasia (*Myk. Vas.* XII. 78) justifies their position in this class.

A considerable number of fragments representing three-handled vases similar to *Myk. Vas.* VII. 45, IX. 52, were found. This seems to have been one of the favorite shapes of this class. As a rule, ornamentation is introduced into the space above the scallops.

Fig. 12 a and **b**. Fragments of large bowl which measured 45 cm. in diameter. Form uncertain. Whether it had a foot is doubtful, so that the height cannot be estimated. Coarse reddish clay (thickness 0.012 m.), with a yellow slip, more reddish in tone on the inside. Decoration in light and dark red.

On the outside (**b**) a row of tall leaves, separated by stalks; on the inside, on rim a variety of "tongue pattern," with a milled border. In field two fishes and an eel.



FIG. 12.

This plate is perhaps the most interesting specimen of Class II., 2. The form is unknown to me in any other vase. It varies from the regular plate type in that the subject is different on the two sides. The pattern on the rim is clearly a very early instance of the "tongue pattern" so common

in later vase-painting. Cf. *Myk. Vas.* XXXIV. 344. The leaf pattern on the outside is only a symmetrical arrangement of the design on *Myk. Vas.* XXXII. 314. The species of the fishes (perhaps carp) remains doubtful, but the naturalness of the drawing is an advance of No. **1** on PLATE LI.

CLASS III., DIVISION 1.

We now cross the great bridge which divides the Mycenaean style and find that the old naturalism has given place to conventionalism. But this is not the only difference between Classes II. and III.; technique itself has made great progress. The clay used is generally red or yellow in color, of a fine clear quality, carefully cleaned from impurities. The quality of the decoration is more lustrous and glossy, while in the best specimens the glaze takes on an intense brilliancy. The style of ornamentation changes, and certain motives used occasionally in the previous classes now become the favorites, such as spirals, etc. The old plant and marine motives with a few exceptions (e. g. the murex) have disappeared, and those which are now prominent are paralleled in other forms of Mycenaean art in stone and metal.

Though the conventionalism of Class III. follows the naturalism of Class II., and in this sense is a later style, we are not to assume that the manufacture of Class II. ceased. In fact there is positive proof that the two flourished side by side, since in the Bee-Hive tomb which we excavated (cf. p. 91 ff) were found vases of both classes. Such a radical change as that from naturalism to conventionalism is not the work of a day; it must have extended over a long period. But such a fact does not argue against a classification based on ornamentation, where a difference of time is not necessarily demanded.

Nor should the relation of III. 1 to III. 2 be misunderstood. We cannot regard them as two absolutely distinct and unrelated styles. I do not for a moment intend to imply that for a certain period of years Mycenaean potters continued to manufacture vases of a certain "hall-marked" excellence and then suddenly began to go down hill. What we call III. 1 is undoubtedly the best work of a certain period of Mycenaean ceramic art; III. 2 is the general average of such a period. As the best work of a given period is only a small proportion of the whole, the small amount of III. 1 compared to III. 2 bears this out. III. 1 bears the same relation to III. 2 that the work of Euphronios, Hieron, Duris, and Brygos does to the mass of red-figured vases produced in Athens prior to the Persian wars; it is the best ceramic art of the time.

The fragments reproduced on PLATE LII. are not all that were found, but the number was not large, and those represented illustrate the group. The technique of all the fragments is substantially the same, the clay red or bright yellow (more often the former), the decoration varying from red to brown, with black occasionally used and the glaze of surpassing brilliancy and fineness. The favorite ornaments seem to be the spiral and the murex.

The majority of the fragments are rims of two-handled bowls or kylixes similar in form to *Myk. Vas.* XLIV. 76, 83.

28. Rim of bowl. Decoration shades from brown to red. Part of a spiral row, spirals unconnected. Cf. *Myk. Vas.* VIII. 46.

29. Rim of one-handled bowl. Clay extremely delicate. Outer band of spiral brown, inner bands red. Cf. *Myk. Vas.* XXIX. 258. Both form and decoration seem to be the same as on the vase in Cassel. *Arch. Anz.* 1899, p. 57, fig. 1.

30. Rim of bowl. Spiral chain.

The majority of the fragments of this class bore the decoration of spirals, in chain or single. Most of the fragments were extremely small.

31 a–c. Three fragments from rim of a bowl. Reddish clay, with bright yellow slip and red decoration. For the toothed edge of **c**, cf. *Myk. Vas.* XXIII. 171.

The murex or purple fish ornament is extremely common. It is curious that we cannot trace its origin to an earlier class, since it does not occur in Classes I. and II. Even in Class III. it is impossible to trace any preliminary steps unless we recognize one of the early essays in the cup from Ialysos;[1] that, however, seems rather too conventionalized for a prototype. The arrangement of the pattern varies, the most common being a row of double murexes as in *Myk. Vas.* XXXI. 297, or else they are laid diagonally on their sides.

32. Rim of bowl. Series of murexes placed diagonally to the line of the rim. Cf. *Myk. Vas.* VIII. 47. Decoration bright red and technique extremely fine.

33. The same.

34. Clay a trifle coarser than is usual in this class and appears burnt. Glaze extremely brilliant. Undoubtedly part of a large vase, as the murex is far larger than is usual.

Various Designs.

35. Rim of bowl. Series of parallel zigzags, decreasing in size towards the base. Cf. *Myk Vas.* XXX. 273.

36. Greenish clay. The design cannot be reconstructed. The nearest similarity lies in two fragments of Class IV. (*Myk. Vas.* XXXVII. 378, 379), and it is possible that we may have here as there the combination of a spiral and a ray.

37 a and **b**. Two fragments from same vase. Net ornament. Cf. *Myk. Vas.* XX. 146.

38. The same.

39. Rim of bowl. Undoubtedly a suggestion of a guilloche. Cf. *Myk. Vas.* XXXIV. 337; XIX. 134.

40. Rim of bowl. Probably a design similar to *Myk. Vas.* XXX. 280.

41. Rim of bowl. Cf. *Myk. Vas.* XXXI. 288.

42. Fine red clay, with whitish slip, red brown decoration. Similar pattern to **37**, save that a cross is placed at each corner of the mesh.

43. Similar clay and slip. Half circle at corner of each mesh.

CLASS III., DIVISION 2.

Class III. 2 forms the bulk of all Mycenaean pottery, no matter where found. Though the largest class of all, it is, as a whole, uninteresting save in regard to its bearing on contemporary art. There is little exercise of skill on the part of the potters, who seem to have been contented to turn out large numbers of vases varying little in form or decoration.

The class differs principally from its predecessor in that the quality as a whole is decidedly inferior. The clay is coarser and not so carefully cleaned, varying in shade, red and yellow predominating. The decoration is of many colors, the different shades of red and brown being the favorites. The paint also is of a very inferior quality, and on many vases has almost entirely faded. The glaze is generally dull, and never reaches that lustrousness so characteristic of the preceding class.

In the arrangement of the fragments, the order adopted by Furtwängler and

[1] *Gaz. Arch.* 1879, pl. XXVII., also in *Myk. Vas.* IX. 56.

Loeschcke has been followed, since the general succession of our fragments differs in no great degree from that of other Mycenaean fragments. Only a few of the Heraeum fragments are here presented, but they illustrate all the principal types and the general development of the ornamentation.

The condition of the fragments was extremely bad. Out of the whole class we succeeded in reconstructing only three vases, one of which coming from a small tomb had almost all the fragments preserved. Another half dozen had about half their fragments remaining, and twenty or more were represented by perhaps a dozen fragments apiece. More than a hundred were represented by from two to five fragments apiece. What the total number of vases represented by the fragments was, is impossible to say, as no calculation can come near the truth; the number certainly ran into the thousands. As a rule where several fragments from the same vase were forthcoming, only one or two are here given, unless the scheme of ornamentation was not plain. As so many cases occurred where fragments of identically the same clay and technique clearly belonged to different vases, the relation of several fragments to one vase has been ignored, unless their common origin was clearly shown by a joining or otherwise.

The field in which our fragments lie is practically covered by plates XVII.–XXXV. of the *Mykenische Vasen*. The fragments corresponding to plates XXV. and XXVI. we have already assigned to Class II. 2. It has proved impossible in all cases to follow Furtwängler and Loeschcke's arrangement exactly, and such variations as are introduced are justified by the demand of the particular fragments under discussion. I have endeavored to discuss the natural sequence of the ornamentation, i. e. to treat the conventionalizing of naturalistic motives first and the linear ones last, since we find the Mycenaean style as a whole passing from linear to naturalistic motives and through the conventionalizing of the latter, receding to linear themes again, as illustrated by Class IV.



FIG. 13.

Fig. 13. Amphora, from *Myk. Vas.* XLIV. 45; height, 0.33 m.; diameter of opening, 0.105 m. Reddish clay, with yellow slip and dull black decoration. From a grave back of the peribolos wall above the South Stoa. Small part of vase restored in plaster.

This was the only vase which allowed a fairly complete reconstruction. The ornamentation is similar to that of the amphora in *Myk. Vas.* XXVI. 223, save that the central design and the buds of the flower are treated in a slightly different fashion.

PLATE LIII.

Flower Buds.

1. Rim and handle of bowl. The bud has here been cut in half. Another smaller fragment of this vase was found.

2. Flower buds in series. Cf. *Myk. Vas.* XXVI. 218, 220.

3. Flower bud and diamond. Cf. *Myk. Vas.* XXVIII. 246.

30. Rim of bowl. Spiral chain.

The majority of the fragments of this class bore the decoration of spirals, in chain or single. Most of the fragments were extremely small.

31 a–c. Three fragments from rim of a bowl. Reddish clay, with bright yellow slip and red decoration. For the toothed edge of **c**, cf. *Myk. Vas.* XXIII. 171.

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FIG. 13.

Fig. 13. Amphora, from *Myk. Vas.* XLIV. 45; height, 0.33 m.; diameter of opening, 0.105 m. Reddish clay, with yellow slip and dull black decoration. From a grave back of the peribolos wall above the South Stoa. Small part of vase restored in plaster.

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1. Rim and handle of bowl. The bud has here been cut in half. Another smaller fragment of this vase was found.

2. Flower buds in series. Cf. *Myk. Vas.* XXVI. 218, 220.

3. Flower bud and diamond. Cf. *Myk. Vas.* XXVIII. 246.

Circles, Diamonds, etc.

4. Circle; dotted row outside. Cf. *Myk. Vas.* XXVIII. 229.

5. Same; dotted row inside.

6. Handle of bowl. Same as **4**, with addition of central dot to the circle. Cf. *Myk. Vas.* XXVIII. 237.

7. Rosette in simplest form.

8. Lozenge with central cross; similar to *Myk. Vas.* XXVIII. 240, save for omission of outside lines.

9. Diamond chain. Cf. *Myk. Vas.* III. 18.

10. Diamond, diagonals inside. Cf. *Myk. Vas.* XXIX. 256.

11. Diamond circle in centre.

Spiral Forms and their Development.

12. Rim of bowl. Another bowl of precisely similar form and decoration is in the Louvre, Room A, left hand window case (no number given). Spiral in its most elementary form.

13. Spirals in chain, simplest form. Cf. *Myk. Vas.* XXVIII. 242.

Fig. 14. Jug with spout and one handle. Height, 0.135 m. Pale yellow clay, with greenish slip, faded black decoration. Row of spirals unconnected. For form, cf. *Myk. Vas.* XI. 66.



FIG. 14.

This jug was labeled as coming from the same tomb as the four small vases of the "dull" finish mentioned on p. 74. Professor Waldstein informs me that the label is wrong, as a photograph of the tomb shows only the four vases already referred to. It is probable that this jug comes from the same tomb as **Fig. 13**.

14. The same. Introduction of ornament (semicircle) in field. Similar to *Myk. Vas.* XXVIII. 245, save that here the ornament is unconnected with the spiral.

15. The same; greenish clay, with faded decoration.

16. The same; ornament resembling an E reversed. Cf. *Myk. Vas.* XXXII. 312.

17. Two semicircles in field. Cf. *Myk. Vas.* XXXIII. 319.

18. Double row of spirals, alternating.

19. Similar arrangement of spirals to that of our amphora (**Fig. 13**). Cf. *Myk. Vas.* XXIX. 256.

20. Cf. *Myk. Vas.* XXIX. 253. Several other fragments of this bowl were found. Its chief peculiarity lies in the greenish yellow slip of the exterior. The decoration is considerably faded. Though no fragments fitted each other, it is plain that the scheme of decoration was a row of spirals, the loops curving upwards and unconnected.

21. Rim of bowl. Reddish clay and red brown decoration.

22. Yellowish clay, pale slip. Stripe on inside. Cf. *Myk. Vas.* XXIX. 255.

23. Shoulder of three-handled vase. Double row of spirals.

24. From a cup of precisely similar form and decoration to one from Nauplia. Cf. *Myk. Vas.* XXI. 150, p. 146; also XXXII. 302.

25. Rim of bowl; dull red glaze on interior. Undoubtedly same shape and design as *Myk. Vas.* XV. 93.

26. Clay of a bright brick red color. Whether the floral or marine influence is most prominent here is hard to say, as the movement strongly suggests the arms of a polyp. Cf. *Myk. Vas.* XVII. 110.

27. Handle with spirals. Introduction of *swastikas*.

Flower Patterns.

The flower pattern in Mycenaean art is one of the earliest motives; we have already found it in Class II. 2 (cf. PLATE LII. 6 and 7), and similar though not identical plants may be found on the sword-blades from Mycenae.[1] A comparison of our fragments with those in *Myk. Vas.* XXX. shows many points of similarity, but the progression towards conventionalization mentioned by Furtwängler and Loeschcke (p. 60) can hardly be seen here, since in none of our fragments is the drawing of the pistils, seed-bags, and leaves at all apparent, and all our fragments have arrived at the conventional stage. The pseud-amphora is the commonest form, though many fragments of bowls like *Myk. Vas.* XXX. 276, were found.

28. Shoulder of pseud-amphora. Two clays together, pale red inside, dark red outside, with a bright yellow slip. Cf. *Myk. Vas.* XVIII. 124; XXX. 266.

29. The same.

30. From belly of a bowl. Cf. *Myk. Vas.* VIII. 43; XXI. 157.

31. Rim of bowl. Several other fragments found. Cf. *Myk. Vas.* XVIII. 122.

32. Similar design.

33. Similar design. Top of flower ends in a loop. Several other fragments from the same vase were found.

34. The zigzag corona of the flower now stands by itself. This is one of the commonest motives, and may be found on dozens of our fragments. Cf. *Myk. Vas.* IX. 51.

35. Series of zigzags used as border lines.

36 a and **b**. Two fragments from the same vase; another smaller fragment was also found. Brick red clay, probably burnt. The zigzag pattern is used almost exclusively, and suggests a transition style to the geometric. The half circles as ornaments in field are used in similar fashion to the "Running Dog" pattern. Cf. Flinders Petrie, *Tel-el-Amarna*, XXVII. 41–43; *Myk. Vas.* XV. 96.

37. Flower branch. Cf. *Myk. Vas.* XXXI. 286.

PLATE LIV.

Flower Branches.

1. Simple form. Dotted row above and below corona.

2. Flower branch similar to PLATE IV. No. 32, corona of zigzags. In field toothed wheel.

3. Similar treatment to No. **1**.

4. Interior dotted row omitted.

5. Similar to No. **1**. Clay burnt to a dark gray.

6. Lower part in form of two spirals curved like volutes.

7. Waving branch to each side, probably as an imitation of a palm-tree. Cf. *Myk. Vas.* XXXI. 293.

8. Top arranged in triple form, half circles unconnected.

9. Part of large bowl. Triple arrangement of corona, in elaborate form, combined with the murex. Cf. *Myk. Vas.* XXXI. 298, p. 61. Whether the murex is paired or single cannot be told with certainty, but probably the former case is true. This combination is a common feature on vases of this class.

10. Cf. *Myk. Vas.* XI. 72. Similar, but not as elaborate.

11. Half a dozen other fragments of almost identical clay and technique were found. Those fragments, however, had different motives, and it seems impossible that so many different themes should be combined on one vase. Hence no reconstruction was attempted. The arrangement of the motive here is clearly connected with the flower branch just discussed.

12. For the scroll ornament cf. Schliemann, *Mykenae*, p. 291, fig. 369, *Jahrb.* II. (1887), p. 55.

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4. Circle; dotted row outside. Cf. *Myk. Vas.* XXVIII. 229.

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[1] *Athen. Mitt.* VII. (1882), p. 245, pl. viii.; cf. also the wall paintings from Therasia. *Myk. Vas.* XII. 73, 74.

Murex, or Purple Fish Patterns.

The murex pattern is generally arranged in series of single ones, or pairs, the tops touching the border of the rim of the vase. Furtwängler and Loeschcke's statement,[1] "das Ornament wird besonders haüfig an Bechern und Näpfen verwendet, doch nur an solchen deren Innenseite ungefirnisst ist," is not correct, since on several of the Heraeum fragments, with glaze on the interior, was this ornament found.

13. Side of a large bowl, form *Myk. Vas.* XXXI. 297, about 30 cm. in diameter. Height cannot be determined, but it was probably the same as the diameter. The clay is of a warm yellow, but with a tinge of red and yellow slip. Decoration changes from black to brown and dark red. Murices in single series. Several other fragments of same vase were found.

14 a and **b.** Two fragments of a kylix, yellow clay. Murexes in single series, rosette under handle. Several other fragments of same vase were found.

15. Rim of bowl. Simple murex combined with another diagonally. Cf. *Myk. Vas.* VI. 30.

16. Murex laid diagonally. Dark red glaze on interior.

17. Murex arranged diagonally. Cf. *Myk. Vas.* VIII. 47. Dotted circle inside head of murex.

18. Murex laid horizontally. Brilliant dark red glaze on interior.

19. Rim of large bowl. Dotted circle outside head of murex. The zigzag pattern at the side is curious and suggests the imitation inscriptions found on black-figured work. Cf. *Myk. Vas.* XV. 96, XX. 145, XXI. 154.

20. Murices in pairs, points curving outwards. Dotted circle between the pairs. This variation where the points curve outwards, and the pair combined in single form, is extremely rare. Cf. Schliemann, *Tiryns*, pl. XXII. b, *Myk. Vas.* XXXI. 299.

21. Alternate murex and pistil.

22. Reddish clay, brown decoration. This ornament is probably a development of the murex pattern.

Linear and Textile Patterns.

The conventionalization of the pictorial ornaments now leads to a steady employment of linear and textile patterns. Whether the latter are really drawn from those used in embroideries is impossible to say.[2]

23. From a bowl of precisely the same form and decoration as *Myk. Vas.* XXXII. 306, save that here the lozenges of the upper row are double instead of triple in form.

24. Alternating larger and smaller arches. Cf. *Myk. Vas.* XXXII. 308.

25. The arches are bounded above and below by circles.

26. Small arches in series.

27. From a large bowl. Suggestion of a guilloche. Cf. *Myk. Vas.* III. 21.

28. The ornaments in field here consist of circles whose diameter is broken. Cf. *Myk. Vas.* XXXII. 313. Perhaps a representation of a mussel-shell open. Cf. *B. C. H.* II. pl. XV. 10.

29. Similar, with the addition of a smaller circle inside the larger one.

30. Ornament resembling a reversed E surrounded by semicircle. Cf. PLATE LV. 16; *Myk. Vas.* XXXII. 304, 307, 312. Perhaps the half of a mussel-shell; cf. *Myk. Vas.* p. 61, No. 304.

The principle in the following fragments seems to be the division of the vase into a series of metope-like squares by vertical lines, the vacant spaces being filled by natural ornaments conventionalized or else textile motives.

31. Simplest form of design. Series of semicircles back to back separated by a series of lines, not quite vertical.

32. Similar decoration. Outer vertical lines bounded by series of loops, which is one of the commonest motives at this time.

[1] *Myk. Vas.* p. 61, No. 297.

[2] Cf. *Myk. Vas.* p. 62.

33. Semicircles almost contiguous. Between the vertical lines, series of parallel zigzags. Cf. *Myk. Vas.* XXXIII. 317.

34. Double semicircles in upper right-hand corner with central dots. Cf. No. **29.**

35. Vertical lines interlaced by diagonal lines.

36. Double semicircles, large and small. Herring-bone pattern between the vertical lines. Cf. *Myk. Vas.* XXXIII. 318.

37. Three double semicircles bounded by mussel ornament in series.

38. Interior semicircle in loop form. Cf. *Myk. Vas.* XXXIII. 324.

39. Dull brown glaze on interior. Square divided into four triangles by diagonals, with arcs. Cf. *Myk. Vas.* XXXIII. 316.

40. The same; double semicircles in each triangle.

41. Diamond in square, divided by double semicircles into three sections. Another smaller fragment from the same vase was found. Cf. *Myk. Vas.* I. 5, XV. 99, XXXIV. 345.

PLATE LV.

1. Reddish clay with darker core, plastic mouldings on upper and lower edges. Form uncertain, but probably that of a three-handled pyxis with rounded base, as in *Myk. Vas.* XLIV. 34. Ornament a variation of the "Running Dog" pattern (see below) growing out of the loops already mentioned. Perhaps the ornament may have been intended for a guilloche. Cf. *Myk. Vas.* XXXIV. 347.

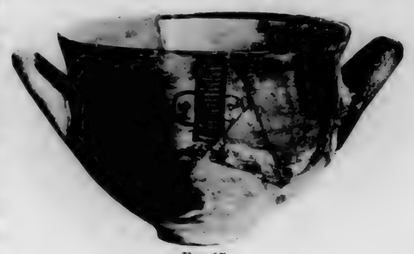


FIG. 15.

2. Similar clay, but from rim of a bowl. Perpendicular loop pattern, the ends carried out to a point (as in No. **1**) with rosette in field.

Fig. 15. Bowl. Form, *Myk. Vas.* XXXIII. 328; height, 0.104 m.; diameter, 0.145 m. Light red clay, with warm yellow slip, circular bands on interior. Similar decoration on both sides, three perpendicular series of lines, the outer inclosing a herring-bone pattern, the central one zigzags with a dotted semicircle on each side. Cf. *Myk. Vas.* XXXIII. 327, 330. Numerous other fragments of precisely this scheme of ornamentation were found.

3. Rim of bowl, reddish yellow clay, continuous zigzag between the perpendiculars and dotted rosettes. Good technique.

4. The ornament is probably a variation of the palm-tree (cf. *Myk. Vas.* XXXI. 296). I have been unable to find another instance exactly similar. Lozenge chain introduced between the perpendiculars. Another small fragment of the vase was also found.

5. Exactly the same clay and technique as PLATE LIV. 11, but it is doubtful whether it belongs to the same vase. The herring-bone, as on PLATE LIII. 34, is here introduced.

6. Herring-bone between the verticals; one of the commonest Mycenaean motives. Cf. *Myk. Vas.* XXXIV. 336.

7. Lozenge chain between the verticals as on **4.**

8. Continuous zigzag between the verticals as on **3.**

9. The zigzags are here separated. Cf. *Myk. Vas.* XXXIV. 340. A common motive.

10. The same, broader lines, verticals in pairs.

11. The same, verticals in pairs, closer together.

12. The lines between the verticals are here treated as on **2.**

13. Interlacing diagonal lines between the verticals. This form of decoration is especially characteristic of the shoulder decoration on pseud-amphoras, or three-handled vases. Cf. *Myk. Vas.* XXII. 159.

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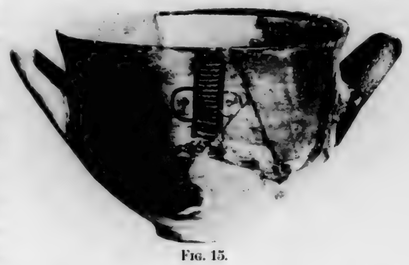


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Fig. 15. Bowl. Form, *Myk. Vas.* XXXIII. 328; height, 0.104 m.; diameter, 0.145 m. Light red clay, with warm yellow slip, circular bands on interior. Similar decoration on both sides, three perpendicular series of lines, the outer inclosing a herring-bone pattern, the central one zigzags with a dotted semicircle on each side. Cf. *Myk. Vas.* XXXIII. 327, 330. Numerous other fragments of precisely this scheme of ornamentation were found.

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14. "Running Dog" and scale patterns. Cf. *Myk. Vas.* XIX. 136; XX. 146.

15. Red glaze on interior. Dotted scale pattern. Cf. *Myk. Vas.* X. 62; Schliemann, *Mykenae*, pl. xiii. 63; Dumont and Chaplain, *Cér.* pl. iii. 19.

16. Scale pattern with dotted circles. Similar in character to *Myk. Vas.* XI. 70.

17. The same, double lines to each scale. Cf. Schliemann, *Tiryns*, fig. 36.

18. Scales in branch form. Cf. *Myk. Vas.* VI. 32; XI. 70.

19. Rim of bowl, another fragment from the same vase also found. Parallels inclosing cross lines meeting at an obtuse angle.

20. Lozenge chain laid horizontally. Cf. No. **7**.

21. The same, chain bounded by an outer line on each side.

22. Similar to **21**, the interior pattern a "Running Dog." Another fragment of the same vase also found.

It is very probable that in **21** and **22** a guilloche was represented. Cf. *Myk. Vas.* XXXIV. 328: Schliemann, *Tiryns*, pl. xxvi. c.

23. "Running Dog" pattern. Cf. *Myk. Vas.* XVIII. 131.

24. Probably the same pattern. The ends, however, do not overlap. Cf. *Myk. Vas.* XV. 96.

25. "Running Dog" pattern, simplest form.

26. The same, double pattern arranged vertically.

27. Probably a development of **24**. Cf. *Myk. Vas.* XV. 96; XXI. 154.

It is well to consider here the line decoration, or linear principle, which runs all through Mycenaean decoration from the earliest times. The examples here cited (PLATE LV.) ought strictly to fall in several of the classes already considered; but as this linear principle has a peculiar bearing on later periods, especially the Argive style, it is best to treat these fragments for a moment in one special class. Only those fragments have been selected which afford an example of fine line decoration; fragments of large vases with broad lines as their only decoration were extremely common.

Though some line decoration occurs on almost every vase of the Mycenaean epoch, it is only during this period, when Class III. flourishes, that we find the steady employment of the fine as well as the heavy line, used chiefly on vases of the pseud-amphora type. The shoulders of such vases are generally filled with various motives, but from the shoulder to the base the vase is ornamented with a series of parallel lines, heavy and fine. Such fragments were extremely common at the Heraeum. Their relation to vases of the Argive style will be more fully discussed in chapter iv.

28. Lower part of funnel-shaped vase, of the so-called "Ialysos" type. Cf. *Myk. Vas.* VII. 42; XI. 71. The opening runs the whole length of the vase. Fragments of such vases were fairly common at the Heraeum, and as far as could be seen the only form of decoration on them was linear.

29. Belly of pseud-amphora.

30. Base of pseud-amphora.

31. From shoulder of pseud-amphora. On shoulder traces of a flower pattern similar to PLATE LIII. 28. The central lines are bordered by a loop pattern, in series.

32. The same. The spirals are treated in a more naturalistic fashion, which, combined with the excellent technique, would seem to denote its standing between Classes II. 2 and III. 1.

There still remain several kinds of vases to be mentioned, which, to judge by technique and style, are certainly not older than Class III. 2, and most probably belong to it.

Vases of a reddish yellow clay, carefully polished, but without decoration. Fragments of these vases were numerous and filled several baskets. Some specimens were found in the Bee-Hive tomb (see p. 91). Only a few vases could be restored from the fragments, and represent mostly kylixes and amphoras.

Another series, which seems to belong to a separate class, was formed by fragments exactly similar to the one-handled cups from the Bee-Hive tomb. (Cf. **Fig. 32**.) The clay is generally fine, red or yellow in color, with a brilliant glaze, the rims and feet being ornamented with bands. The body of the vase is covered with a decoration hard to describe; it seems as if the color had been sprayed on the surface of the vase. Whether this is the same technique exhibited by the vases from Aliki (*Myk. Vas.* XVIII. 119, 125), I cannot say; it is not common, and thus far the only similar specimens I have been able to note are from the Acropolis at Athens and Aegina. Just what position they occupy in the Mycenaean style is doubtful, but the several points of technique, clay, glaze, and color would seem to assign them to Class III. in the first division rather than the second.

Of the class of small, hand-made vases, mentioned in *Myk. Vas.* p. 63, the Heraeum furnished one intact (**Fig. 16**) and numerous fragments of others. This is a one-handled jug (height, 0.065 m.) of light reddish clay, with yellow slip, the decoration varying between black and red. Cf. *Myk. Vas.* XV. 101, 102, XVI. 108; Schliemann, *Mycenae*, p. 66, No. 27.



FIG. 16.



FIG. 17.

Another vase belonging to Class III. is **Fig. 17**; height, 0.06 m.; diameter, 0.051 m. Two legs and handle restored. Greenish clay, with black bands on body and legs, dots on rim.

The form of this vase is identical with *Myk. Vas.* XLIV. 192, save that the legs do not turn up at the bottom. Cf. *Jahrb.* I. (1886), p. 134, fig. 3006.

CLASS IV.

The number of fragments belonging to Class IV. is very small. In only a few cases were more than three fragments of the same vase found, and even then the design could not always be reconstructed. The peculiar fact is that the fragments of this class which we possess do not show the wealth of ornamentation we should have expected. A very slight study of vases belonging to this class from other localities shows that it is thoroughly decadent, with a wealth of ornamentation linear rather than pictorial in character. The Heraeum fragments show this linear feature, and even though the wealth of ornamentation be lacking, the similarity between them and other vases of the class, in decoration, clay, technique, etc., is strong enough to warrant our placing them in Class IV. without question.

The clay of all our fragments of this class is much coarser than in the previous class, and is generally greenish in tone. The color has lost the lustre which was prominent before, while the glaze is generally dull and never rises to the level of that of Class III. in point of brilliancy. Though the forms of the vases cannot always be determined, it is safe to say that bowls were the most common. It may also be stated that fragments of this class which belong to vases with large openings do not always have the interior glazed (*Myk. Vas.* p. 63), or, to put it differently, the absence of glaze on the backs of large fragments of bowls is no proof that they are not connected with Class IV. In fact, among the Heraeum fragments of this class, glaze on the back was the exception rather than the rule.

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As the number of fragments is so few, no attempt has been made to arrange them in

chronological order, nor, indeed, could any satisfactory classification of ornamentation be found, since in an over-elaborate style like Class IV. it is a difficult task, when dealing with a few scattered fragments, to evolve any definite scheme. In the main the order is based upon plates XXXV. and XXXVI. of the *Mykenische Vasen*.

33. Pattern similar to PLATE LIV. 38. Alternate diamonds in the interspaces of the arches. Cf. *Myk. Vas.* XXXV. 351. Two other fragments of the same vase were found.

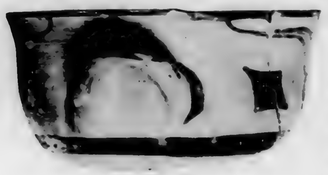


FIG. 18.

34. From side of bowl. Greenish clay. Cf. *Myk. Vas.* XXXV. 357.

Fig. 18. Half of bowl. Form, *Myk. Vas.* XXXIII. 318; height of fragment, 0.069 m.; clay light red, with warm yellow slip, red decoration fairly brilliant. Though half of the design is missing, there can be no doubt that it was somewhat similar to *Myk. Vas.* XXXI. 296, with a lozenge of interlaced lines on either side.

Throughout Class IV. the "Heraldic" scheme or "Wappenstil" plays a prominent part and is illustrated by several of our fragments.

35. Similar "Heraldic" scheme. Band on interior just below the rim. Cf. *Myk. Vas.* XLI. 424.

36. Similar arrangement. Continuation of design to a circle of interlacing lines.

37. Decoration much faded. Evidently a development of *Myk. Vas.* XXIX. 256; cf. *Myk. Vas.* XXXV. 357.

38. Possibly a development of *Myk. Vas.* XXXI. 296. Though dots are frequently employed as the groundwork of a design, their use in place of the line is very curious. A somewhat analogous use occurs in fragments from Tiryns. (Cf. below No. **46**.) The "Heraldic" scheme suggests *Myk. Vas.* XXXV. 356.

39. Shoulder of pseud-amphora. Ellipse inclosing series of zigzags.

40. Perhaps similar arrangement to *Myk. Vas.* XXXVI. 376.

41. From a bowl. Band below rim on inside. Similar "Heraldic" scheme to **Fig. 18**.

42. From a large vessel.

43. Reddish clay, fine technique. Elliptical lines inclosing series of zigzags curving to a point.

44 a–d. Four fragments from same bowl. Greenish clay, with black decoration. The arrangement of the design is extremely difficult to restore. That **a** bird was intended seems fairly evident if **a** (the head) be compared with *Myk. Vas.* XXXVI. 364, and **c** (the wing) with XXXVIII. 383. Perhaps like Schliemann, *Tiryns*, pl. x. 45.

BIRDS, ANIMALS, AND HUMAN FIGURES.

Though the use of figures, animal or human, is one of the later innovations of the Mycenaean style and a characteristic feature of Class IV., all vases which show this use do not necessarily belong to that class. Such figures seem to have been introduced during the latter period of Class III. Only half a dozen of such fragments were found at the Heraeum, but no satisfactory explanation of the lack of such fragments is forthcoming. All except the last (No. **47**) belong to Class III.

45 a and **b**. Two fragments from the same vase. Brick red clay, with dark red decoration. Two birds, somewhat resembling a wild duck, are represented. Both fragments show an extremely advanced style of technique and belong to Class III.

46. Rear part of base of the well-known "Tiryns" type. The legs and body of the horse are filled in by dots as in No. **38**. An identical use may be found in a fragment from Tiryns (Schliemann, *Tiryns*, pl. xxi. *a*).

Fig. 19. Fragment of a large bowl of 34 cm. in diameter. Height of fragment, 0.125 m.; length, 0.22 m.; thickness of clay, 0.006 m. Reddish clay, with lighter core and pale reddish slip, dull red decoration. Upper part of two fishes represented. Class III.



FIG. 19

The arrangement of fishes in a symmetrical series with a flower branch between them is a natural characteristic of the third class. The use of crosses instead of dots as decoration for the body is quite akin to that on plate xi. 48 of Schliemann's *Mycenae*. A similar arrangement may be noted on a lebes from Cyprus in the British Museum. (*Excavations in Cyprus*, p. 35, fig. 66, No. 1038.) Cf. also Petrie, *Kahun, Gurob, and Hawara*, pl. XXVIII. 9.

47 Base of a bowl. Reddish yellow clay, with black decoration. Lower part of human figure with a tree or branch.

This is the only Mycenaean fragment from the Heraeum on which the human figure occurred. Its treatment is somewhat curious, and savors more of those figures on Geometric vases. However, it seems doubtful whether any Geometric influence can be here recognized.

Fig. 20. (Form, *Myk. Vas.* XLIV. 63; drawing on PLATE LXIV. 1.) One-handled jug; height, 0.054 m. Found at the southeast of the Second Temple. Yellow clay and slip with decoration varying from black to red. On base rays, and figure zone on the body; another figure zone on the shoulder, and stripes on the neck and rim. Vertical zigzag on the handle between two perpendicular lines. Intact.



FIG. 20.

This vase is of special interest, since it shows the transition between the Mycenaean and Argive styles. Clay and technique are unmistakably Mycenaean, but the general scheme of decoration savors more of the Argive style, since we have an animal zone and a very primitive example of a ray pattern around the base.

On the shoulder are represented three animals, but so rudely drawn that it is impossible to identify them. They have large open mouths, three projections above, which may represent ears and horns, and a tail almost like an extra leg. Each leg ends in a triple division. Three animals precisely similar are represented on the main zone, inverted. This inversion gives an extremely curious effect, as the animals thus resemble boats with their sailors, the ray pattern serving as waves; but it is plain that such an effect is accidental. This inversion of the figures is paralleled by two skyphoi from the Heraeum (v. p. 151), and does not, as far as I know, occur on any Mycenaean vase.

This vase has been assigned to the Mycenaean class purely on technical grounds, for it shows so perfectly the characteristics of both the Mycenaean and Argive styles that it is difficult to decide to which class it really belongs. It must be admitted that no animal on any Mycenaean vase resembles these figures in any way; but, for that matter, no similar animal can be found on any Argive vase.

THE BEE-HIVE TOMBS NEAR THE HERAEUM.

Two tombs were discovered on the 20th and 23d of April, 1894. Both have been described in the previous volume of this publication, and consequently there is no need of devoting any time to the consideration of their architectural features. The contents of these tombs was as follows: —

chronological order, nor, indeed, could any satisfactory classification of ornamentation be found, since in an over-elaborate style like Class IV. it is a difficult task, when dealing with a few scattered fragments, to evolve any definite scheme. In the main the order is based upon plates XXXV. and XXXVI. of the *Mykenische Vasen*.

33. Pattern similar to PLATE LIV. 38. Alternate diamonds in the interspaces of the arches. Cf. *Myk. Vas.* XXXV. 351. Two other fragments of the same vase were found.

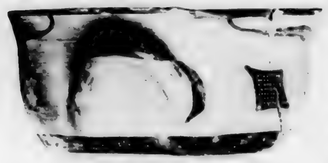


FIG. 18.

34. From side of bowl. Greenish clay. Cf. *Myk. Vas.* XXXV. 357.

Fig. 18. Half of bowl. Form, *Myk. Vas.* XXXIII. 318; height of fragment, 0.069 m.; clay light red, with warm yellow slip, red decoration fairly brilliant. Though half of the design is missing, there can be no doubt that it was somewhat similar to *Myk. Vas.* XXXI. 296, with a lozenge of interlaced lines on either side.

Throughout Class IV. the "Heraldic" scheme or "Wappenstil" plays a prominent part and is illustrated by several of our fragments.

35. Similar "Heraldic" scheme. Band on interior just below the rim. Cf. *Myk. Vas.* XLI. 424.

36. Similar arrangement. Continuation of design to a circle of interlacing lines.

37. Decoration much faded. Evidently a development of *Myk. Vas.* XXIX. 256; cf. *Myk. Vas.* XXXV. 357.

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TOMB I.

49 vases, 32 entirely or nearly whole, and 17 in fragments.
3 terra-cotta figurines.
1 terra-cotta chair.
1 island stone.
4 steatite whorls.
1 ivory needle.
Glass beads.

TOMB II.

Fragments of vases.
4 steatite whorls.
1 red agate bead.
1 bronze ring.

The few vase fragments from the second tomb were mostly undecorated, and permitted no reconstruction. A few fragments of bones were also found; but in the main the contents of the tomb are not worth a detailed consideration.

In the first tomb the results were more gratifying. Three layers were found, the upper containing bones and four vases (mostly cups), at a depth of 2.79 m.; the second, which contained a skull, some calcined bones, and the majority of the vases and fragments, at a depth of 3.28 m. Ten cm. below the second came the last layer, which, besides a few fragments of bones and a cup (No. **18**), contained a small separate grave near the entrance of the *dromos* (length, 1.26 m.; width, 0.45 m.; depth, 0.66 m.). Through some accident during the transportation to Athens, several of the labels were lost, and it is now impossible, in the case of some of the vases or fragments, to decide from which layer they came.

The classes represented were II. 2 and III. 2. No specimens which showed the advanced technique of III. 1 were found, nor were there any rough pieces which could belong to II. 1. At the same time there appears to have been no distinction in the matter of layers, since vases of both classes were scattered about in each layer. Certain it is, however, that all these vases are products of the same period.

The shapes represented were as follows: —

11 jugs with handle.
2 jugs with handle and spout.
9 three-handled vases.
6 amphoras.
3 cups.
9 cups with handle.
4 kylixes.
1 pseud-amphora.
4 vases, represented by fragments, but not permitting a complete restoration.

Jugs with Handle.



Fig. 21.



Fig. 22.

1. Height, 0.207 m. Form, *Myk. Vas.* XLIV. 63. Coarse reddish clay, without any decoration. Base of handle pierced by a hole. Intact: first layer.

Two more jugs (height, 0.235 m. and 0.22 m.) were found in the second layer, of precisely similar form and technique. Both had a small hole at the base of the handle.

2. Height, 0.155 m. Similar shape to **1**, but with handle a little more flaring. Reddish clay, with a highly polished yellow slip, without any decoration.

Half of another vase of same form and technique was found.

3. (Fig. 21.) Height, 0.103 m. Same form as **1**. Red clay, with herring-bone pattern in a series of four on the shoulder in red brown.

Another jug precisely similar, but with spirals on the shoulder and plastic boss under the handle was also found.

4. (Fig. 29.) Height, 0.078 m. Handle missing. Form similar to **1**, but rather more rounded and squat in appearance. Reddish clay, with black decoration laid on very thickly and cracked in places. Bands and continuous spiral chain on the shoulder, with dots in the field.

Another similar jug with leaf pattern on shoulder was found.

5. (Fig. 23 *a* and *b*.) Height, 0.074 m.; diameter of cover, 0.075 m. One-handled vase with cover. Form similar to *Myk. Vas.* XLIV. 115, except that here the foot is lacking. Coarse red clay, with dark core pierced by two rows of holes, with a single row in the cover. The use of this peculiar vessel has never been satisfactorily explained; similar examples have been found at Troy in the fourth city (Schliemann, *Ilios*, p. 557, fig. 11, 96), and at Ialysos. (*Myk. Vas.* II. 15.) According to Furtwängler and Loeschcke these vessels were used to burn incense or some sweet-smelling powder for sanitary reasons, and this explanation seems very plausible, especially as we find the cover also pierced with holes.



a Fig. 23. *b*

Amphoras.

6. (Fig. 24.) Height, 0.17 m. Form, *Myk. Vas.* XLIV. 44, except for a slight variation in the foot. Coarse brick red clay without decoration. The exterior has been entirely covered with a white wash, almost entirely worn away.



Fig. 24.

The principal feature of this amphora lies in the white wash. This, as is shown by many of our fragments, was a very common feature, and half a dozen baskets are filled with fragments showing it. Generally it seems to be employed on vases of coarse clay, large pithoi or small wheel-made saucers. While this technique is employed very often on Mycenaean terra-cotta figurines and later vases (e. g. the white lekythoi), it is extremely rare on archaic vases (two in Berlin, 1309, 1629), and I know of no other instance in the Mycenaean style. From its frequency in our fragments, it may perhaps be considered as a local fashion.

Another small amphora (height, 0.09 m.) similar in shape, of yellowish clay with a reddish tinge, but without the white wash, was found in the second layer.

7. (Fig. 25.) Height, 0.105 m. Light red clay, with yellow slip. Faded black glaze over all, inside and outside (except base).

This vase differs from the ordinary Mycenaean amphora in that the handles have no connection with the mouth of the vase. The absence of all decoration and the presence of the glaze proves that a large part of the glazed fragments which the Heraeum furnished must be placed in the Mycenaean period.

8. Height, 0.07 m.; form, *Myk. Vas.* XLIV. 73. Yellow clay, with red decoration very much faded. Second layer.

This vase was identical with *Myk. Vas.* X. 64. XV. 99, except that around the shoulder ran a series of ornaments similar to PLATE LV. 24.



Fig. 25.

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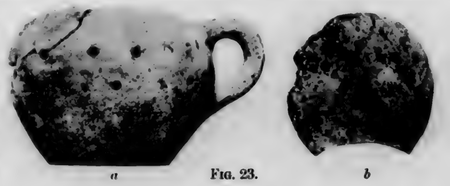
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Amphoras.

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Another small amphora (height, 0.09 m.) similar in shape, of yellowish clay with a reddish tinge, but without the white wash, was found in the second layer.

7. (Fig. 25.) Height, 0.105 m. Light red clay, with yellow slip. Faded black glaze over all, inside and outside (except base).

This vase differs from the ordinary Mycenaean amphora in that the handles have no connection with the mouth of the vase. The absence of all decoration and the presence of the glaze proves that a large part of the glazed fragments which the Heraeum furnished must be placed in the Mycenaean period.

8. Height, 0.07 m.; form, *Myk. Vas.* XLIV. 73. Yellow clay, with red decoration very much faded. Second layer.

This vase was identical with *Myk. Vas.* X. 64. XV. 99, except that around the shoulder ran a series of ornaments similar to PLATE LV. 24.



Fig. 25.

Three-handled Vases.

Three varieties were found: (a) form, *Myk. Vas.* XLIV. 25, tall with wide opening; (b) form, *Myk. Vas.* XLIV. 32; (c) form, *Myk. Vas.* XLIV. 33.

a.

9. (Fig. 26.) Height, 0.213 m. Reddish clay, with black decoration turning to dark red. One handle missing. Three pairs of spirals on shoulder, separated by the handles and bands, heavy and fine. Second layer.



FIG. 26.

The form of this vase does not quite correspond to *Myk. Vas.* XLIV. 25, as the mouth is a little wider and the foot less pronounced; it lies between forms 25 and 27. When found it was completely full of ashes, which are probably human.



FIG. 27.

The upper part of a similar vase, but much smaller, was also found. Shoulder decoration, interlaced lines.

b.

10. (Fig. 27.) Height, 0.098 m.; diameter, 0.172 m.; diameter of opening, 0.098 m. On shoulder flower pattern similar to PLATE LII. 6, with dotted rosettes in field. Bands on base, the upper joined with a wave pattern and series of radiating lines on base. The decoration varies from black to red brown.

11. (Fig. 28.) Height, 0.05 m.; diameter, 0.185 m.; diameter of opening, 0.085 m. On shoulder three fishes. Usual decoration of bands in dark brown. First layer.

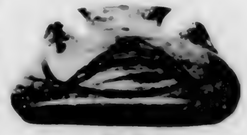


FIG. 28.

Four more vases of this type were found varying in height from 38 to 84 cm. The decoration was the same in all, a wave pattern on the shoulder similar to *Myk. Vas.* VIII. 45.

c.

12. Height, 0.06 m.; diameter, 0.109 m.; diameter of opening, 0.07 m. Dark and light red decoration, identical with *Myk. Vas.* XXII. 159, save that the stripes on the body run horizontally, not vertically. Interlaced lines on shoulder.

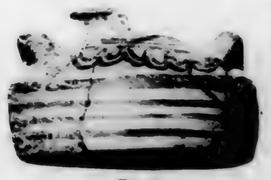


FIG. 29.

13. (Fig. 29.) Height, 0.065 m.; diameter, 0.10 m.; diameter of opening, 0.07 m. Brilliant black decoration. On shoulder double line loop pattern, bands on body in red and on base spirals in light brown.

The form of **13** is a cross between *Myk. Vas.* XLIV. 32 and 33, being higher in the body than 32, but lower than 33.

Teapot-shaped Jugs.

14. Height, 0.13 m. Form, *Myk. Vas.* XLIV. 68. Bands on body and handle and series of spirals on shoulder precisely similar to *Myk. Vas.* IX. 54.

15. Height, 0.12 m. Form, practically the same as *Myk. Vas.* XLIV. 15, except that the foot is flat. Entire vase covered with a dark red glaze except under handle and on the bottom.

Pseud-amphora.

16. Height, 0.115 m. Form, *Myk. Vas.* XLIV. 50. Ordinary decoration of heavy and fine bands similar to PLATE LV. 29, in red and brown. First layer.

Kylixes.

Four of these were found, of red or yellow clay, without any decoration. Two were of the same form as *Myk. Vas.* XLIV. 83; one, the same as *Myk. Vas.* XLIV. 82; while the fourth probably corresponded to form 85, but as one side was completely broken away, it cannot be told whether the vase possessed one or two handles. They were all from 10 to 12 cm. in height and from 11 to 15 cm. in diameter. One (form 82) was elliptical in shape, having a diameter across the handles of 13 cm.; at right angles to the handles, 14½ cm.

Cups.

Two varieties of cups were noted (a) without handle; (b) with handle.

a.



FIG. 30.

17. (Fig. 30.) Height, 0.027 m.; diameter, 0.07 m. Brilliant red stripes around body, with another stripe on the rim inside.

Two others of similar shape were found, one a little more rounded at the base, measuring 43 and 44 mm. in height, 9 and 11 cm. in diameter, with no decoration whatever.

b.

Two varieties of **b** were noted: (**1**) Those with a handle curving upwards, above the rim, and (**2**) those with a handle curving downwards, below the rim.

1.

18. Height, 0.06 m.; with handle, 0.14 m.; diameter, 0.153 m. Form, *Myk. Vas.* XLIV. 102. Entire vase, except base and under the handle, is covered with a brilliant red glaze.

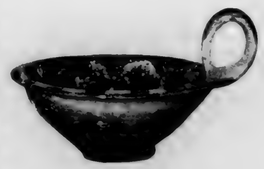


FIG. 31.

19. (Fig. 31.) Height, 0.06 m.; diameter, 0.104 m. Red clay, red glaze on interior, outside plain.

Three other cups of similar shape but with the rim less emphasized, were found, two undecorated, one ornamented with stripes. It is probable that **18** and **19** are direct imitations of metal work.[1]

2.

20. (Fig. 32.) Height, 0.045 m.; diameter, 0.113 m. Form, *Myk. Vas.* XLIV. 87. Red clay, with light red stippling.



FIG. 32.

This cup is a good instance of the technique mentioned on p. 89. Three more cups were found, all of the same shape, one showing the same technique, one with a row of ornaments on the side similar to those on No. **8**, and the third plain.

The terra-cotta figurines and the chair are described in the chapter on Terra-Cotta Figurines (p. 42).

[1] Cf. Perrot and Chipiez, *Hist.* VI. p. 965, fig. 533.

Three-handled Vases.

Three varieties were found: (**a**) form, *Myk. Vas.* XLIV. 25, tall with wide opening; (**b**) form, *Myk. Vas.* XLIV. 32; (**c**) form, *Myk. Vas.* XLIV. 33.

a.

9. (Fig. 26.) Height, 0.213 m. Reddish clay, with black decoration turning to dark red. One handle missing. Three pairs of spirals on shoulder, separated by the handles and bands, heavy and fine. Second layer.



FIG. 26.

The form of this vase does not quite correspond to *Myk. Vas.* XLIV. 25, as the mouth is a little wider and the foot less pronounced; it lies between forms 25 and 27. When found it was completely full of ashes, which are probably human.



FIG. 27.

The upper part of a similar vase, but much smaller, was also found. Shoulder decoration, interlaced lines.

b.

10. (Fig. 27.) Height, 0.098 m.; diameter, 0.172 m.; diameter of opening, 0.098 m. On shoulder flower pattern similar to PLATE LII. 6, with dotted rosettes in field. Bands on base, the upper joined with a wave pattern and series of radiating lines on base. The decoration varies from black to red brown.

11. (Fig. 28.) Height, 0.05 m.: diameter, 0.185 m.; diameter of opening, 0.085 m. On shoulder three fishes. Usual decoration of bands in dark brown. First layer.

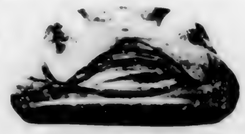


FIG. 28.

Four more vases of this type were found varying in height from 38 to 84 cm. The decoration was the same in all, a wave pattern on the shoulder similar to *Myk. Vas.* VIII. 45.

c.

12. Height, 0.06 m.: diameter, 0.109 m.; diameter of opening, 0.07 m. Dark and light red decoration, identical with *Myk. Vas.* XXII. 159, save that the stripes on the body run horizontally, not vertically. Interlaced lines on shoulder.

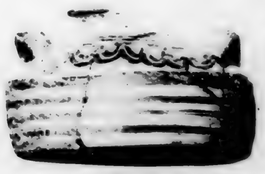


FIG. 29.

13. (Fig. 29.) Height, 0.065 m.: diameter, 0.10 m.; diameter of opening, 0.07 m. Brilliant black decoration. On shoulder double line loop pattern, bands on body in red and on base spirals in light brown.

The form of **13** is a cross between *Myk. Vas.* XLIV. 32 and 33, being higher in the body than 32, but lower than 33.

Teapot-shaped Jugs.

14. Height, 0.13 m. Form, *Myk. Vas.* XLIV. 68. Bands on body and handle and series of spirals on shoulder precisely similar to *Myk. Vas.* IX. 54.

15. Height, 0.12 m. Form, practically the same as *Myk. Vas.* XLIV. 15, except that the foot is flat. Entire vase covered with a dark red glaze except under handle and on the bottom.

Pseud-amphora.

16. Height, 0.115 m. Form, *Myk. Vas.* XLIV. 50. Ordinary decoration of heavy and fine bands similar to PLATE LV. 29, in red and brown. First layer.

Kylixes.

Four of these were found, of red or yellow clay, without any decoration. Two were of the same form as *Myk. Vas.* XLIV. 83; one, the same as *Myk. Vas.* XLIV. 82; while the fourth probably corresponded to form 85, but as one side was completely broken away, it cannot be told whether the vase possessed one or two handles. They were all from 10 to 12 cm. in height and from 11 to 15 cm. in diameter. One (form 82) was elliptical in shape, having a diameter across the handles of 13 cm.; at right angles to the handles, 14½ cm.

Cups.

Two varieties of cups were noted (**a**) without handle; (**b**) with handle.

a.



FIG. 30.

17. (Fig. 30.) Height, 0.027 m.; diameter, 0.07 m. Brilliant red stripes around body, with another stripe on the rim inside.

Two others of similar shape were found, one a little more rounded at the base, measuring 43 and 44 mm. in height, 9 and 11 cm. in diameter, with no decoration whatever.

b.

Two varieties of **b** were noted: (**1**) Those with a handle curving upwards, above the rim, and (**2**) those with a handle curving downwards, below the rim.

1.

18. Height, 0.06 m.; with handle, 0.14 m.; diameter, 0.153 m. Form, *Myk. Vas.* XLIV. 102. Entire vase, except base and under the handle, is covered with a brilliant red glaze.

19. (Fig. 31.) Height, 0.06 m.; diameter, 0.104 m. Red clay, red glaze on interior, outside plain.



FIG. 31.

Three other cups of similar shape but with the rim less emphasized, were found, two undecorated, one ornamented with stripes. It is probable that **18** and **19** are direct imitations of metal work.[1]

2.

20. (Fig. 32.) Height, 0.045 m.; diameter, 0.113 m. Form, *Myk. Vas.* XLIV. 87. Red clay, with light red stippling.



FIG. 32.

This cup is a good instance of the technique mentioned on p. 89. Three more cups were found, all of the same shape, one showing the same technique, one with a row of ornaments on the side similar to those on No. **8**, and the third plain.

The terra-cotta figurines and the chair are described in the chapter on Terra-Cotta Figurines (p. 42).

[1] Cf. Perrot and Chipiez, *Hist.* VI. p. 965, fig. 533.

MISCELLANEOUS VASES.

Of the vases found intact, or partially so, mentioned in the Introduction, by far the greater part consisted of small, hastily made vases, with or without decoration, the exact date of which is extremely doubtful. The quality of the clay is distinctly inferior to that of the Mycenaean vases, and in many respects corresponds to that used in vases of the Geometric style, so that the majority of them may well belong to that period.

A comparison of the vases without decoration with the decorated vases is the only means for establishing a date for the former, and in the case of the latter the following data are available: (1) The most primitive examples (the saucers) show a use of "dull" color, which, together with their rather hasty technique, may perhaps assign them to the earlier periods of the Mycenaean style. (2) One small three-handled jug, which, from its polished surface, belongs more properly to the class discussed on p. 99, had a linear band of "dull" color. (3) Practically all the jugs, amphorae, and bowls were made of a coarse clay, more resembling that used in the Geometric vases, and if they are to be included in the Mycenaean style at all, would seem to belong to the very latest period. These, I shall endeavor to show later, constitute the real link between the Mycenaean and Argive styles. At the same time, I do not regard their sequence from primitive times as existing without a break, and for that reason I do not consider them as examples of the "Argive Linear" style which Professor Waldstein would consider them to be. It cannot, however, be assumed that their influence on any particular style was marked; they are simply the examples of the low level to which the potter's trade could sink, and from their large number it is reasonable to suppose they were the cheapest vases which the devotee at the shrine could buy. Being rough and small, they were not so easily broken, and were thus in far better preservation than larger vases of better technique. To assign an exact date to them is impossible, nor can they be arranged in any exact chronological order, except where the development of the shape can be readily seen.

Three general types may be distinguished: —

Saucers.
Bowls (with or without handles).
Jugs (with one, two, or three handles).

Saucers.

Three distinct varieties may be noted: —

a. Plain, hand or wheel made.
b. With central boss.
c. With handles.

a.

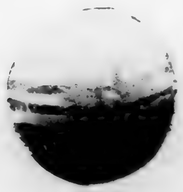


Fig. 32 *a*.
Diameter, 0.05 m.

1. The most primitive examples seem to be a series of small hand-made saucers, of grayish or reddish clay, pierced by a hole near the rim, and varying from 5 to 7 cm. in diameter, and 2 to 3 cm. in height. Several hundred were found intact or in fragments. The ornamentation is of the simplest character, consisting of two lines crossing each other at right angles. Whether they belong to the dull or lustrous Mycenaean vases is difficult to decide, as the decoration is extremely poor, but they are more probably examples of the "dull" technique. Variety is obtained by increasing the number of cross-lines, which vary from two to eight. As a rule the ornamentation is confined to the interior, but cases occur with the same design on the exterior as well. The earliest of the series is a saucer of red clay 5 cm. in diameter, with ribbed edges and two incised cross-lines on the interior. This probably falls in the primitive period.

Similar saucers were found in large numbers at Hissarlik, Mycenae, and Tiryns. In some respects they resemble saucers from Bos-öjük (Koerte, *Athen. Mitt.* 1899, pl. iii. 7) and Syra (Ἐφημ. Ἀρχ. 1899, pl. ix. 25).

2. As a development of these we have a series of wheel-made saucers, of reddish clay (e. g. **Fig. 32 b**), from 4 to 7 cm. in diameter, of which about fifty were found. The inner edge of the rim is either sharply defined or rounded, and none have any decoration. The clay is of a slightly coarser variety than that used in the preceding examples.

b.

1. The earliest examples are hand-made, of a reddish clay, without decoration, having a small boss in the middle; they resemble the earliest examples of class **a**, save for their lack of decoration and the addition of the boss.



Fig. 32 *b*.
Diameter, 0.082 m.
Height, 0.013 m.



Fig. 32 *c*.
Diameter, 0.061 m.
Height, 0.016 m.
Height of boss, 0.026 m.

2. The wheel-made type (**Fig. 32 c**) corresponds in character of clay (wheel-made) and lack of decoration to **a, 2**. The principal variations lie in the height of the boss, which in some cases rises above the edge of the saucer. As in **a, 2**, the edges of the saucer are either rounded or sharp. A few examples were found with a series of parallel dashes of paint (dull) on the rim.

c.

Two varieties may be noted with one handle, and one with two handles.

The simplest form of the one-handled saucer is hand-made, the edges rolled over so as to form a curve down to the bottom of the vase, and the handle, of the simplest form, parallel with the sides. (**Fig. 32 d.**) This type was extremely common. A variation is introduced occasionally, where a plastic dab of clay is placed on each side of the handle along the rim, similar to those on the shoulders of our terra-cotta figurines (**Fig. 32 e**); this saucer was entirely covered with a brown glaze, worn away in places. A few specimens were noted with one handle, and three plastic dabs of clay, arranged so as to form a symmetrical scheme on the four sides of the vessel. While the majority of these saucers are undecorated, some few are covered with a dull dark glaze, badly worn.

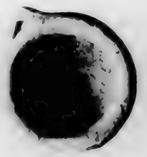


Fig. 32 *d*.
Diameter, 0.04 m.
Height, 0.012 m.

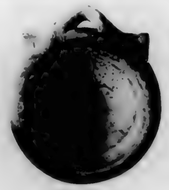


Fig. 32 *e*.
Diameter, 0.044 m.
Height, 0.015 m.

All the saucers with two handles show these plastic projections on each side of the

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a. Plain, hand or wheel made.
b. With central boss.
c. With handles.

a.

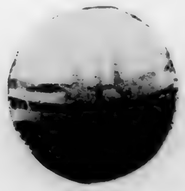


Fig. 32 *a*.
Diameter, 0.05 m.

1. The most primitive examples seem to be a series of small hand-made saucers, of grayish or reddish clay, pierced by a hole near the rim, and varying from 5 to 7 cm. in diameter, and 2 to 3 cm. in height. Several hundred were found intact or in fragments. The ornamentation is of the simplest character, consisting of two lines crossing each other at right angles. Whether they belong to the dull or lustrous Mycenaean vases is difficult to decide, as the decoration is extremely poor, but they are more probably examples of the "dull" technique. Variety is obtained by increasing the number of cross-lines, which vary from two to eight. As a rule the ornamentation is confined to the interior, but cases occur with the same design on the exterior as well. The earliest of the series is a saucer of red clay 5 cm. in diameter, with ribbed edges and two incised cross-lines on the interior. This probably falls in the primitive period.

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2. As a development of these we have a series of wheel-made saucers, of reddish clay (e. g. **Fig. 32 b**), from 4 to 7 cm. in diameter, of which about fifty were found. The inner edge of the rim is either sharply defined or rounded, and none have any decoration. The clay is of a slightly coarser variety than that used in the preceding examples.

b.

1. The earliest examples are hand-made, of a reddish clay, without decoration, having a small boss in the middle; they resemble the earliest examples of class **a**, save for their lack of decoration and the addition of the boss.

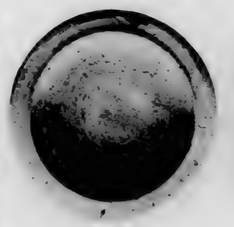


Fig. 32 *b*.
Diameter, 0.062 m.
Height, 0.013 m.

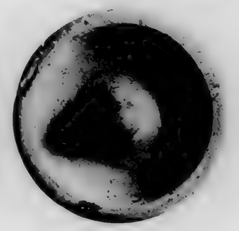


Fig. 32 *c*.
Diameter, 0.061 m.
Height, 0.016 m.
Height of boss, 0.026 m.

2. The wheel-made type (**Fig. 32 c**) corresponds in character of clay (wheel-made) and lack of decoration to **a**, **2**. The principal variations lie in the height of the boss, which in some cases rises above the edge of the saucer. As in **a**, **2**, the edges of the saucer are either rounded or sharp. A few examples were found with a series of parallel dashes of paint (dull) on the rim.

c.

Two varieties may be noted with one handle, and one with two handles.

The simplest form of the one-handled saucer is hand-made, the edges rolled over so as to form a curve down to the bottom of the vase, and the handle, of the simplest form, parallel with the sides. (**Fig. 32 d**.) This type was extremely common. A variation is introduced occasionally, where a plastic dab of clay is placed on each side of the handle along the rim, similar to those on the shoulders of our terra-cotta figurines (**Fig. 32 e**); this saucer was entirely covered with a brown glaze, worn away in places. A few specimens were noted with one handle, and three plastic dabs of clay, arranged so as to form a symmetrical scheme on the four sides of the vessel. While the majority of these saucers are undecorated, some few are covered with a dull dark glaze, badly worn.

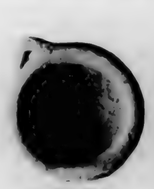


Fig. 32 *d*.
Diameter, 0.04 m.
Height, 0.012 m.

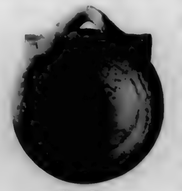


Fig. 32 *e*.
Diameter, 0.044 m.
Height, 0.015 m.

All the saucers with two handles show these plastic projections on each side of the

handle. The earliest example is hand-made, of precisely similar clay and technique to those first mentioned under **a**, with four cross-lines on the interior. The wheel-made types show a decided advance in execution. They are almost flat (a trifle over a centimetre in height, and from six to seven centimetres in diameter), the edges well defined, and they are made of a dark red clay without decoration. About a dozen specimens were found. As the quality of the clay resembles more closely the Geometric clay, and as they are exactly paralleled in shape by several of our bronze saucers, it is certain that they must fall in a rather later period, perhaps about the eighth century.

Bowls.

The earliest examples of bowls seem to be contemporary with the most primitive saucers mentioned above; they are hand-made, of very rude technique, the sides raised a trifle. In some cases a small dab of clay is added to the rim to represent a handle. None have any decoration.

The total number of bowls found was between one and two hundred; of these a few are hand-made, but the greater part are wheel-made. Slight variations in the forms may be detected, but hardly enough to warrant a regular classification.

The hand-made bowls are either plain or decorated, rounded at the base or else provided with a flat base. None have handles. The decoration invariably consists of one, two, or three narrow bands encircling the bowl just below the shoulder. A dozen examples were found where the vase had been covered with a white paint (as in No. 6 of the Bee-Hive tomb: Fig. 24). On one example a straight or a wavy band had been painted in red; this was added after the final firing as in the case of terra-cottas, and is easily friable. None of these bowls exceeded 3 cm. in height or 5 cm. in diameter.

Something over a hundred wheel-made bowls were found, the majority of a coarse reddish clay, similar to that of the wheel-made saucers. Only a few examples bore any decoration. The form is generally the same with the following variations. The rim is either flat, slightly curved, or sharply emphasized as in the saucers; the profile sometimes flares sharply outward and downward so that the diameter is greater at the base than at the opening. As a rule the profile curves inward towards the base, which is flat. The usual form of decoration consists of one or two broad or fine wavy bands on the shoulder. The following is the best example: —



Fig. 33.

Fig. 33. Height, 0.024 m.; diameter, 0.047 m. Dark clay, seemingly burnt. On shoulder dark brown wavy band with yellow dots. Similar dotted band on rim.

This is probably one of the latest of the series, as the clay is more like that of the Geometric vases in texture and the technique more advanced. It is probably one of the earliest instances of the Geometric snake. The use of yellow dots seems to be a peculiarity of the Argolid and will be discussed later.

A few bowls were found, the rims ornamented by three plastic heads of animals, probably calves.

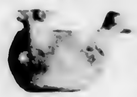


Fig. 34.

Fig. 34. Height, 0.026 m.; diameter, 0.043 m. Red clay.

Further another class may be mentioned of a technique slightly more advanced, where the bowl is provided with a foot and two large handles rising above the rim, similar in form to *Myk. Vas.* XLIV. 16, but without any decoration.

Jugs.

These numbered over five hundred and formed the majority of all the Heraeum vases intact or partially so. The greater part of them are wheel-made. As usual two classes of these were observed, those with decoration and those without. The greater part of the undecorated vases were exactly similar in size, form, and technique to the decorated vases, but a special class of hand-made undecorated vases existed which demands a more careful discussion.

I.

Without Decoration.

These vases all show the same peculiarities. The clay is of a dark red or yellow, the outside of which has undergone a very brilliant polish, and in some cases through the action of the fire has become bright red in places. Two shapes are represented. One-handled jugs or oinochoai and three-handled jugs. All are small, the largest not more than 12 cm. in height.

We are able to date with a fair degree of certainty the period in which these vases fall. First, one specimen of the handled jugs had on the shoulder a wavy band which is decidedly dull, not lustrous in character; secondly, other specimens have been found in a grave at Syracuse along with vases of the Argive style (second period).[1] Thus we obtain two *termini*, which show that these vases were manufactured as early as the Mycenaean dull period (fifteenth century) and as late as the Middle Argive period (eighth century).

Most of the shapes are similar to those used in the Argive style, only slightly more primitive in character, and naturally so, seeing that they are hand-made. A very few, which show the most developed form, are wheel-made and are probably the latest. At the same time the example from the Syracusan grave is certainly hand-made, showing that the use of the wheel was not universal even in that period of advanced archaism.

One-handled Jugs.

Two distinct forms may be noted, those with a circular and those with a trefoil rim (oinochoe). The latter show a technique more advanced, which fact, together with the form, assigns them to a later date than the first essays. At the same time it is certain that the oinochoe with trefoil lip is a form known to the Mycenaean epoch.[2] Further we find that the body is either round with a handle rising above the rim, or cylindrical with the top of the handle level with the rim.

Fig. 35. Height, 0.035 m. Handle restored. On either side is a small boss, perhaps representing a handle. On shoulder two straight lines and a wavy band in dull technique.



Fig. 35.

Several other examples of this same shape were found, but this jug alone possessed any decoration.

A few examples were found where the neck is slightly longer in proportion to the body and the handle dropped lower than the rim. Cf. *Ilios*, Fig. 1140.

[1] Tomb 305. Tomb 65 from Megara Hyblaea also contained a similar vase. The same polish was observed on a lekythos from the Heraeum (height, 0.05 m.), of dark gray clay, the shape rather advanced, being that of the lekythos on p. 127. fig. 54. At Syracuse (tomb 428), a specimen exactly identical was found along with lekythoi belonging to the oriental Argive period. The vases found by Wide at Aphidna (*Athen. Mitt.* p. 385 ff. pl. xiv.) seem to show a similar technique, but are not so advanced in form. It would seem fairly safe to assign both our vase and that from Syracuse to the period succeeding the Mycenaean style.

[2] *Vide* Furtwängler, *Arch. Anz.* 1893, p. 9.

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Something over a hundred wheel-made bowls were found, the majority of a coarse reddish clay, similar to that of the wheel-made saucers. Only a few examples bore any decoration. The form is generally the same with the following variations. The rim is either flat, slightly curved, or sharply emphasized as in the saucers; the profile sometimes flares sharply outward and downward so that the diameter is greater at the base than at the opening. As a rule the profile curves inward towards the base, which is flat. The usual form of decoration consists of one or two broad or fine wavy bands on the shoulder. The following is the best example: —



Fig. 33.

Fig. 33. Height, 0.024 m.; diameter, 0.047 m. Dark clay, seemingly burnt. On shoulder dark brown wavy band with yellow dots. Similar dotted band on rim.

This is probably one of the latest of the series, as the clay is more like that of the Geometric vases in texture and the technique more advanced. It is probably one of the earliest instances of the Geometric snake. The use of yellow dots seems to be a peculiarity of the Argolid and will be discussed later.

A few bowls were found, the rims ornamented by three plastic heads of animals, probably calves.



Fig. 34.

Fig. 34. Height, 0.026 m.; diameter, 0.043 m. Red clay.

Further another class may be mentioned of a technique slightly more advanced, where the bowl is provided with a foot and two large handles rising above the rim, similar in form to *Myk. Vas.* XLIV. 16, but without any decoration.

Jugs.

These numbered over five hundred and formed the majority of all the Heraeum vases intact or partially so. The greater part of them are wheel-made. As usual two classes of these were observed, those with decoration and those without. The greater part of the undecorated vases were exactly similar in size, form, and technique to the decorated vases, but a special class of hand-made undecorated vases existed which demands a more careful discussion.

1.

Without Decoration.

These vases all show the same peculiarities. The clay is of a dark red or yellow, the outside of which has undergone a very brilliant polish, and in some cases through the action of the fire has become bright red in places. Two shapes are represented. One-handled jugs or oinochoai and three-handled jugs. All are small, the largest not more than 12 cm. in height.

We are able to date with a fair degree of certainty the period in which these vases fall. First, one specimen of the handled jugs had on the shoulder a wavy band which is decidedly dull, not lustrous in character; secondly, other specimens have been found in a grave at Syracuse along with vases of the Argive style (second period).[1] Thus we obtain two *termini*, which show that these vases were manufactured as early as the Mycenaean dull period (fifteenth century) and as late as the Middle Argive period (eighth century).

Most of the shapes are similar to those used in the Argive style, only slightly more primitive in character, and naturally so, seeing that they are hand-made. A very few, which show the most developed form, are wheel-made and are probably the latest. At the same time the example from the Syracusan grave is certainly hand-made, showing that the use of the wheel was not universal even in that period of advanced archaism.

One-handled Jugs.

Two distinct forms may be noted, those with a circular and those with a trefoil rim (oinochoe). The latter show a technique more advanced, which fact, together with the form, assigns them to a later date than the first essays. At the same time it is certain that the oinochoe with trefoil lip is a form known to the Mycenaean epoch.[2] Further we find that the body is either round with a handle rising above the rim, or cylindrical with the top of the handle level with the rim.

Fig. 35. Height, 0.035 m. Handle restored. On either side is a small boss, perhaps representing a handle. On shoulder two straight lines and a wavy band in dull technique.



Fig. 35.

Several other examples of this same shape were found, but this jug alone possessed any decoration.

A few examples were found where the neck is slightly longer in proportion to the body and the handle dropped lower than the rim. Cf. *Ilios*, Fig. 1140.

[1] Tomb 305. Tomb 65 from Megara Hyblaea also contained a similar vase. The same polish was observed on a lekythos from the Heraeum (height, 0.05 m.), of dark gray clay, the shape rather advanced, being that of the lekythos on p. 127. fig. 54. At Syracuse (tomb 428), a specimen exactly identical was found along with lekythoi belonging to the oriental Argive period. The vases found by Wide at Aphidna (*Athen. Mitt.* p. 385 ff. pl. xiv.) seem to show a similar technique, but are not so advanced in form. It would seem fairly safe to assign both our vase and that from Syracuse to the period succeeding the Mycenaean style.

[2] *Vide* Furtwängler, *Arch. Anz.* 1893, p. 9.



Fig. 36.

Fig. 36. Height, 0.112 m. Found east of the Northwest Building. The base is thicker in proportion to the opening than in most of our vases of this type.

Fig. 37. Height, 0.044 m. This would seem to be a prototype of the oinochoe form which is so common during the Argive period (p. 128). It is the commonest type of these small vases, and at least forty other specimens were found. I have noted several other examples, two in Syracuse (Syracuse, tomb 305, and Megara Hyblaea, tomb 65) and three in the Louvre (Room A, case N, 496, 497, 498) from Attica. Those from Syracuse and Megara Hyblaea were found with vases of the second Argive period.



Fig. 37.

Fig. 38. Height, 0.74 m. Oinochoe. Burnt in parts to a brilliant red. The base is slightly flatter than most of the oinochoai of this type, but otherwise shows no important variation.



Fig. 38.

About a dozen oinochoai were found. One example, wheel-made, was remarkable for the handle rising above the rim and having two small breast-like protuberances on the shoulder, a somewhat unusual feature on vases of the Mycenaean epoch.

Three-handled Jugs.

Twenty or thirty of these were found, but save for the addition of a small handle on each side of the body they differed in no way from the one-handled jugs already described. The trefoil lip does not occur. They are all smaller than the one-handled jug, the highest not measuring more than 6–7 cm.

II.

With Decoration.

Two types may be noted, as in the undecorated jugs. (**a**) those with one handle; (**b**) those with three handles.

Of the one-handled jugs, almost all followed the same type with but slight variations, the opening being circular and the neck broad or narrow. The trefoil lip was seen only in a few examples. The decoration on all is practically the same, lines around the body with a zigzag or wavy band on the neck in some cases.



Fig. 39.

Fig. 39. Height, 0.105 m.; diameter of opening, 0.069 m. (form, *Myk. Vas.* XLIV. 65); grayish clay with a greenish tinge, black decoration. On neck zigzag band, with parallel stripes on neck, body, foot, and inside rim. On shoulder opposite the handle dotted rosette.

This is by far the best specimen of the type and the most advanced. The clay is not quite so characteristically Mycenaean as in some other cases, but it cannot very well be included in the Geometric or Argive classes.

The three-handled jugs were the most numerous, as several hundred were found, and seem to belong to a later period. The form does not

seem to be Mycenaean, while the quality of the clay is decidedly inferior. But as this principle of decoration is practically the same as that already considered, these vases are properly to be discussed here. The shapes are fairly uniform, though slight variations may be detected in the height of the neck, size of the handles, fullness of the body, separation of the foot from the body, etc.

The decoration follows a consistent scheme, in that the body is reserved for parallel stripes or bands and the shoulder for other motives, as rays, vertical lines, wavy bands, zigzags, rosettes, etc. The neck is occasionally ornamented in similar fashion.



Fig. 40.

Fig. 40. Height, 0.09 m. Coarse reddish clay, with red decoration. Parallel stripes on body, with rays on shoulder. Stripes inside rim and on handle. The foot is separated from the body.

Fig. 40 is a typical example of the class. About half of these vases have a flat base, without a foot.

Two-handled Vase.



Fig. 41.

Fig. 41. Height, 0.05 m. Yellowish clay, with dull brown decoration. Two handles (restored), with a hole running through the sides; no opening in the top.

I have been unable to find any example similar to this vase. It must be regarded as a mere freak of the potters' art, with no definite *raison d'être*.

CHAPTER III.

THE GEOMETRIC STYLE.

It would seem at first sight as if vases of the Geometric style were the most numerous at the Heraeum, since their fragments filled about twice as many baskets as either those of the Mycenaean or Argive styles. But as Geometric fragments are generally fairly large in size, since they belong to large vases, and the Argive fragments extremely small, it was found that the actual number of vases represented by Argive fragments was considerably larger than those represented by the Geometric.

For many reasons an intelligent presentation of the Geometric fragments has proved extremely difficult. Owing to the larger size of the vases, hardly a single one was found intact, and in no case could more than a third of any vase be reconstructed, though some vases were represented by several hundred fragments apiece. Although the number of shapes represented is extremely large, many are so closely allied to each other — the chief variations being in the number of handles, the shape of the neck, etc. — that, without the whole, or at least the greater part of a vase, a systematic classification based upon shapes becomes difficult, if not impossible. Then, too, almost the entire surface of the vase is covered with a decoration combining many different motives, and in such a case it was difficult to decide which fragments should be presented and which not, since there was danger, in a classification based on ornamentation alone, of treating separately motives which belonged to the same vase. Finally, hardly a single new type of this style was found at the Heraeum; the decoration on almost every fragment represented may be paralleled by dozens of vases scattered through the museums of Europe.

The style also presents this peculiarity, that it is far more conservative than any other



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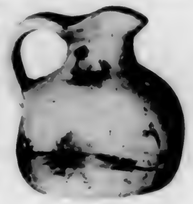


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The style also presents this peculiarity, that it is far more conservative than any other

style, and seems less susceptible to progressive ideas. The Heraeum fragments, which probably cover a period of two centuries, are marked by their monotony and consistent adherence to a general scheme. Types are to be distinguished, of course, but such a classification as proved practicable with the Mycenaean and Argive styles becomes impossible here.[1]

The fragments here presented illustrate the development of the various motives so extensively employed. At the same time this classification has been adopted solely as a working hypothesis, since the nature of the material forbids even an approach to finality; that can only be secured by a classification based upon material larger, more comprehensive, and in better condition than that furnished by the Heraeum.

As the character of the decoration on our fragments is practically identical with that of Dipylon ware, the question immediately arises whether our fragments were made in the Argolid or imported from Attica, since no other districts can well claim their manufacture. Though certainty on this point is impossible, the evidence seems to point to the former hypothesis. Fragments of this style have been found at both Mycenae and Tiryns in large quantities, showing that the style was a common one in the Argolid. As the amount of Mycenaean ware found there is so large as to point to a very flourishing vase industry, there seems no valid reason why Geometric ware should not have been manufactured there also. Lastly, the clay of the Heraeum fragments is heavy, carelessly cleaned, and of a yellowish or greenish tinge, while that of the Dipylon vases is lighter, cleaner, and of a reddish shade; the decoration also of the Heraeum fragments is in general of a duller lustre and less decided in its character than the Attic.

One of the radical points of difference between the Mycenaean and Geometric styles lies in the clay, and the difference is especially apparent to the touch. The quality of the grain in the Geometric is far coarser than in the Mycenaean vases, and never, even in the best examples, does it attain to the lightness and smoothness of the latter. Whether this difference results from the employment of clay from a different bed or from different technical methods in its preparation, I am unable to say. But as the difference between the clay of Mycenaean vases found in Attica and the Dipylon vases is just as great as in the case of our fragments,[2] it does not necessarily argue that none of our Geometric vases were manufactured in the Argolid; it would rather be a cause for wonder if they were not made there.

It can hardly be said that the Geometric fragments from the Heraeum throw much light on the vexed question of the origin of the Geometric style in Greece. Up to the present moment three widely different views have been proposed: (1) the old view, which has now, I think, been generally abandoned, that it was the result of some Eastern influence (Egyptian, Carian, or Ionian); (2) the view expressed by Furtwängler and Loeschcke, that the style was the result of the Dorian invasion; (3) the last and most radical view, advocated by Wide and Wolters, that the Geometric style is an autochthonous growth, a "Bauernstil," as opposed to the "Herrenstil" of the Mycenaean civilization, and the direct result of the primitive forms of decoration, but subject to some external influence which may have been supplied by some such movement as the Dorian invasion.

[1] Since the above was written, Dr. Wide's analysis of the Geometric style has appeared in the *Jahrbuch* for 1899 (pp. 26 ff., 78 ff., and 188 ff.) and 1900 (p. 49 ff.). It may be readily seen that such an arrangement as that adopted by Wide is out of the question with the material from the Heraeum, for the reasons given above. At the same time an effort will be made to mention all the types cited by Wide which could be identified among the Heraeum fragments.

[2] See p. 65, note, on the results of Dr. Washington's investigations touching this point.

From Wide's investigations at Aphidna, his contention that the primitive elements for the Geometric style are to be found in Greece seems to be satisfactorily established; also, from his analysis of the survival of Mycenaean motives in the Geometric style (*Athen. Mitt.* XXII. (1897), p. 233 ff.), it may be easily seen how close is the connection between the two styles. But neither theory is sufficient to account for the true Geometric style, which, as he admits himself, does not show the transitional stages of development which were to have been expected if the style were derived directly from the Mycenaean.

For the Heraeum fragments it must be said that only a few scattered specimens (e. g. PLATE L. 15, 16, and 17) show the existence of Wide's pre-Dorian elements; such specimens, however, are more in line with Professor Waldstein's linear theory, and are not good examples of the "Bauernstil." That a small number of fragments, which, though Geometric as far as clay and technique were concerned, also show distinctly the survival of Mycenaean motives, points to a close connection between the two styles. At the same time, the difference between such fragments and those of the pure Geometric style is so great that it is difficult to believe that the Geometric style could possibly have originated as the natural sequence of such prototypes.

The need for some decided infusion of fresh ideas is the chief obstacle against the entire acceptance of Wide's theory. As we can hardly assume that the finished Geometric style is the natural outcome of previous conditions, subject to no outside influence, we must seek some reason for such a phenomenon, and of all the solutions offered, the theory of the Dorian invasion seems to my mind the most satisfactory.

While the actual occurrence of such a migration has never been conclusively established, it is generally agreed that some great upheaval took place in Greece during the eleventh century B. C. Certainly all the phases of the civilization which succeeded the Mycenaean period show a radical change of style, which can hardly be accounted for by a purely natural and unaided development. It is too much to assume that the people who brought about such a change were necessarily identical with the people of the "Hallstatt" period, though the similarity between objects of that period and the Geometric style is extremely striking. As the Geometric style is found at the Heraeum practically full-grown (as is also the case in Attica), it remains to be seen whether some external movement can account for its growth.

Now, granting for the moment that the Geometric style could have developed in Attica along the lines laid down by Wide, the same can hardly be true at Argos; were such the case we should certainly expect to find a steady and continuous development from primitive or Mycenaean times. The linear theory for the origin of the Argive style can hardly apply here. Since an autochthonous growth can scarcely account for the style at the Heraeum, some external influence is absolutely necessary. It would seem that at a time when the Mycenaean civilization in the Argolid was on its decline there appeared a new influence, which effectually finished the Mycenaean civilization, and brought in with it no new elements (since almost all of them had been in use before), but a new and radical combination of those elements. Seeing that these elements are linear, and thus characteristic of *all* peoples during the primitive stages of their civilization, it matters little who these people were, though they may well have been the Dorians; the main point is that they brought with them a new style, or new arrangement of motives already in use. It is hard to see how any other explanation can account for the rise of the Geometric style in the Argolid; with Attica the case is not so evident.

We have already pointed out that, except for a few slight technical differences, the Geometric style in the Argolid is practically identical with that of Attica. If we assume that Wide's theory of an autochthonous development for the style in Attica is true, and that some external influence created the style in the Argolid, we are confronted by a most surprising contradiction of facts, — that two different influences at work in two different places should produce substantially the same results. Theoretically such a case might be possible, but not practically; one influence must be responsible for both styles.

Therefore it does not seem difficult to assume that this external influence (if Dorian it be) was felt in Attica as well as Argos. Such a theory would supply the lacuna, which Wide admits, in the complete development of the style, and does not preclude the existence of an earlier, primitive Geometric style in Attica. Although the Attic historians always claimed that Attica had never been overrun by the Dorians, the legend of Codrus shows that she was not untouched by their movement, and there seems no reason why the legend of the movement of some tribe against the Attic frontier should not be symbolical of a steady movement from the Peloponnesus along the shores of the Saronic gulf to the very confines of Attica.

To assign a chronology to these events is impossible. They cannot have taken place at once, but were probably spread out over half a century. But while by this reasoning the Dipylon style is shown to be slightly younger than the Argive Geometric, it is not implied that the former is the result of the latter, but that it is the result of the same principle as the latter which first made itself felt in Argos, and finding the conditions in Attica practically the same, naturally accomplished there the same results.

The relation of the Geometric style to the Argive, with which it is closely connected, will be discussed in chapter IV.

In the Argive Geometric fragments three distinct types may be detected: —

I. The earliest or transitional stage from the Mycenaean.

II. Purely Geometrical style.

III. The introduction of animal and human figures, *genre* scenes, and development of bands of figures.

CLASS I.

TRANSITIONAL STAGE.

Fragments of this class were not very numerous, and, as no vases were preserved entire, they do not lend themselves to a satisfactory arrangement. Two variations of this class were noted, — fragments of distinctly Geometric clay with Mycenaean ornamentation, and fragments of Mycenaean clay with Geometric ornamentation. At the same time the scheme of decoration is treated rather from a Mycenaean than a Geometrical standpoint, and it cannot be assumed that these fragments are the result of the new influence; it is most probable that they mark the low ebb to which the Mycenaean style was sinking, as the fourth class lustrous finish declined. The difference in the clay would seem to show, either that at the end of the Mycenaean period some change had been made in the preparation of the clay, or that for some reason it was taken from different beds. However, in view of the similarity in clay of all Geometric vases, wherever found, it seems more likely that the difference between it and Mycenaean clay lies solely in the manner of preparation.

If, therefore, this change in the preparation of the clay took place before the Dorian invasion, the Geometric style is simply the supplanting of the Mycenaean motives by purely Geometrical ones.

Wide has endeavored in his article on the survival of Mycenaean motives in the Geometric style (*Athen. Mitt.* XXII. [1897], p. 233) to trace the development of the various motives which had their origin in the Mycenaean style during the later period. I cannot, however, agree with his assertion that the centre of the Mycenaean activity lay in the islands. Wide bases this claim on the supposition that the vases which show this connecting link between the Mycenaean and Geometric styles have been found only on the islands. Such a supposition cannot now be entertained, since not only are many of these types to be seen on our fragments, but also on vases recently found in Attica. Of the motives mentioned in Wide's article, the following occur at the Heraeum on various fragments mentioned below. (The page references are from Wide's article.)

Toothed wheel and star (p. 235, fig. 3).

One-handled-jug (p. 237, fig. 5). Numerous fragments of jugs with precisely similar decorations were found. Also several handles with a plastic snake.

Amphora (p. 238, fig. 6). Fragments of similar amphoras were extremely numerous at the Heraeum. Dozens of fragments belonging to rims showed a lozenge chain, with or without a central dot. Equally numerous were the lozenge chains formed by interlacing lines, the rhomboids (single) and "Running Dog" patterns.

(P. 238, fig. 7.) Several fragments from the shoulder of a vase showing similar decoration were found. The form is uncertain, but as the base of a spout was apparent, it is probably a jug similar to the Mycenaean ones with one handle. The clay is coarse and of a dark red color. The decoration on both shoulder and belly consists of a net pattern (not a meander, as in the Munich vase), the spaces filled by rosettes or dotted lozenges. Under the base of the spout is a leaf pattern.

(P. 240, fig. 8.) Circles with cross in the centre, arranged singly in pairs or in series, were among the commonest types on the Heraeum fragments.

(P. 244, fig. 14 *a*.) Several fragments with this motive were found.

(P. 246, fig. 17.) At least a hundred fragments from the rims of large bowls showed this combination of a wave pattern and dotted circles.

The preceding enumeration of the various types is valuable as showing the occurrence of Wide's types at the Heraeum. The following fragments are here introduced to show the use of Mycenaean motives on a Geometric clay. It must be remembered, however, that the difference in clay is hardly perceptible in the plate; in all these fragments it is generally greenish or yellowish in tone (sometimes reddish), coarse in quality, and not very carefully cleaned, never possessing, except in a few cases, the smooth surface so characteristic of Mycenaean clay.

PLATE LVI.

1. Fragment of a large vessel, probably an amphora. Coarse yellow clay; decoration varying from dark to light brown. Checkerboard and circles.

The quality of the decoration resembles the Mycenaean more closely than does that of any other fragment. We have here the circles (as in Wide, *loc. cit.* p. 244, fig. 14 *a*) with the Geometric checkerboard. Both are treated in a slightly freer fashion than we shall find usual. Several other similar fragments were found.

2. From a bowl. Reddish clay, with a yellow slip. Spirals in dark red.

3. The same. Red glaze on interior, bright red decoration.

4. The same; coarse yellow clay. Red decoration.

2–4 show the employment of purely Mycenaean motives on Geometric clay.

5. From rim of large bowl. Greenish yellow clay, with bands on interior below rim; brown decoration very faded.

The Mycenaean spiral is here preserved intact.

6. Greenish clay, with light brown decoration. Combination of zigzags and Mycenaean flower branch (cf. Wide, *loc. cit.* p. 242, fig. 12 *a*). Fragments with this combination were very numerous.

7. Light brown clay, with polished surface. Lustrous brown glaze on interior.

This fragment is extremely curious, since beside the zigzags it has the eye, nose, and hair of a human face with a rosette beneath. A similar instance is unknown to me.

8. From large vase, probably an amphora. Dark yellow clay, with decoration varying from greenish brown to black.

9. From rim of amphora. Greenish clay.

10. From a large bowl. Brick red clay, with red glaze on interior. Red decoration faded. Rosette and zigzags.

Fragments similar to **8** and **10** were very numerous (certainly a basket full) and seem to constitute the earliest essays in the Geometric style proper. While the clay is coarse, it has been covered with a whitish slip (as in Mycenaean vases) and the decoration applied rather thinly without any lustre. Some of the fragments had a dark brown glaze on the interior, which, together with their size, seems to show that they belong to amphoras or bowls. Outside of the Heraeum this ware is not common; the nearest approach seems to be a variety found at Syracuse. On none of these fragments was any decoration found which included the human or animal figure, the established scheme being straight lines and zigzags. In fact, on Argive Geometric vases the use of the zigzag seems to be carried to a far greater extent than in Attic work.

Besides the motives already mentioned, we find wavy lines (for rim and shoulder), rays, rosettes, lozenges (entirely black), and a single zigzag line used exclusively on the rims of bowls.

Further, we may mention a number of fragments (chiefly handles and necks) which seemed to belong to amphoras similar to those in *Jahrbuch*, XV. (1900), p. 51, fig. 107, the only decoration being a wavy band on the neck and stripes on the body and handles. These fragments evidently belong to Class I.

CLASS II.

PURELY GEOMETRICAL TYPES.

Fragments with purely Geometrical ornamentation formed the bulk of this style at the Heraeum. The vases are almost entirely covered with a brown glaze (in the case of bowls the glaze is also used on the interior), with a series of parallel bands running round the body, which in many cases formed the sole decoration. The principal motives are placed on the shoulder, neck, or rim, and consist generally of a meander pattern arranged singly or in series. These meanders are formed by single lines, or by double lines with a series of short parallel cross-lines, straight or diagonal, between them, which give the effect of shading. In some cases the cross-lines are omitted. Other motives are: —

Zigzags, singly or in series. These are either drawn in a single line or else double, with a shading of cross-lines as in the meander patterns.

Checkerboards. These are treated in a variety of ways. The simplest form is a series of squares, alternately black and plain (i. e. the natural color of the clay). Variety is secured by the insertion of a lozenge into the plain squares, or else shading the black squares by a network of lines.

Rays. Generally in series around the base or rim. These are either in outline, black, or of interlaced lines. In some cases the rays are drawn in double outline, with a row of dots between the lines.

Wave pattern. Generally a single broad line, sometimes with the addition of a dotted row on each edge. This, an original Mycenaean motive, eventually develops into the Geometric snake.

Lozenges. In their most elementary form as a rhomboid, such as is found on Mycenaean vases of the fourth class. Generally in the Geometric style we find them in chain, with or without a central dot. Owing to carelessness or hasty technique the chain often resembles a series of ovals.

Net pattern. In many cases this is nothing but a lozenge chain in parallel lines, the whole giving the motive its net-like appearance.

Circles. Generally two or more concentric circles, with a central dot, singly or in series, sometimes connected, sometimes not.

Rosettes or stars. Generally treated in series, either as an independent band or else as a border to the wave pattern. Cases occur, especially in plates, where the rim is surrounded by a border of leaf or flower petals, with a shading of lines.

Pot-hooks. As in early Attic work.

"*Running Dog*." Generally used on the rims of bowls.

Guilloches. Generally on the base of a vessel with a tall foot.

Swastikas. As ornaments in field.

Dotted lines. Used as a variation of the plain circular band.

Since none of these motives are new in the Geometric style, and as no peculiar combinations of them occur on our fragments, none are given in our plates. All these motives may be found on vases where "animal" motives are introduced; at the same time a large number of fragments show clearly that this animal decoration does not occur on a great part of the vases.

As practically none of the vases are preserved intact, any list of the various forms found must be incomplete. Roughly speaking, the following shapes were represented by fragments: —

Amphoras.	One-handled jugs (*oinochoai*).
Bowls (*skyphoi*).	Plates.
Bowls with a tall foot.	Cups with one handle.

The rarer forms will be discussed later when dealing with their fragments.

CLASS III.

THE INTRODUCTION OF HUMAN AND ANIMAL MOTIVES.

The third class of the Geometric style is by far the largest, not only at the Heraeum, but in almost all the other places in Greece where the style is found. The introduction of the human or animal figure must have taken place at an early period, though hardly at the very beginning of the style. It is true that we find these figures in the fourth class of the Mycenaean style, but their treatment differs materially from that usual in the Geometric period. Moreover, the Geometric types which are certainly the oldest, such as the transitional types found on the islands (cf. Wide, *loc. cit.*) and those more recently discovered in Attica and Corinth, exhibit pure Geometric decoration, with no traces of a human or animal motive. At the same time, no great chronological distinction can be demanded between Classes II. and III. of the Heraeum fragments, since the scheme of ornamentation, except for the introduction of human or animal figures, is practically the same in both.

The variations of the different motives in Class III. are numerous, but their development seems fairly clear. We find two distinct groups.

1. Where the motive is treated simply with few, if any, ornaments in the field.
2. Elaborate treatment of the motive and wealth of ornaments in the field.

By all general laws of art, fragments in the second division are younger than those in the first, since the *horror vacui*, as exemplified by other styles, is the result of a realiza-

tion of the fundamental principles of art, without the ability to attain the end desired. Exceptions may be found, since some fragments show a decided lack of ornaments in the field combined with a technique extremely advanced, but such fragments are not so common as to warrant the reversal of our order. We must either assume that they are exceptions to the rule or else that they are merely advanced specimens of the first division, contemporaneous with the second, but still, through conventionality of taste, adhering to the earlier principles.

The choice of subjects in both divisions is the same. While the greater part of the vase is occupied by purely Geometrical decoration, the key-note of the ornamentation consists of one of the following types: —

A. Birds.

a. In friezes (water birds).
b. As the principal subject, singly or in groups.

B. Horses.

a. Singly or in frieze.
b. "Heraldic" scheme.

C. Men.

a. In frieze.
b. "Heraldic" scheme.
c. "*Genre*" scenes (hunting, rowing, fighting, etc.).

D. Women.

a. In frieze.

E. Miscellaneous.

Deer, dogs, and other animals, usually in frieze, but often introduced as ornaments in field.

A. Birds.

The bird as a motive of decoration is not only the most common one in the Geometric style, but there is good reason for assuming it to be the earliest of the motives included in Class III. It is found on many fragments which through their primitive technique appear to belong to the earlier period of the style, where the other animal motives are wanting. We find it as a common feature on Mycenaean vases of Class IV., though treated in a different fashion, showing that the motive is not original in the Geometric style. But as the similarity between the earliest type of the water bird frieze in the Geometric style and the band of vertical zigzags common on the rims of Mycenaean bowls is so marked, there is reason for supposing that while the bird itself was borrowed directly from the Mycenaean fourth class, its arrangement in a frieze was suggested by the use of the zigzag band.

Fragments having this water bird motive were extremely numerous, belonging to the rims of small bowls around which ran a frieze of birds.[1] The earliest examples are mere zigzag lines, the later more elaborate, the figure of the bird being shaded by cross-lines, and the head and beak more sharply defined. Ornaments in field are then introduced, principally dots, rosettes, and zigzags. Soon after the introduction of the frieze the bird itself becomes the real subject of decoration, but rapidly passes to the position of an ornament in field itself.

Some slight differences may be detected in the various birds, but it is of little use to

[1] As on a skyphos said to come from Mycenae (*Jahrb.* XVI. [1899], p. 85, fig. 43). From the close similarity to the Geometric vases from the Heraeum, there can be no doubt that the vase referred to comes from the Argolid.

try and identify them with any particular species. As some have a tuft of feathers at the back of the head, they may perhaps represent cranes or herons.

PLATE LVI.

a.

11. Rim of bowl; black glaze on interior.

This is the commonest type of the frieze, and was found in very large quantities at the Heraeum. The type is too common to cite any further examples.

12. Rim of bowl; dark brown glaze on interior. Treatment of bird more elaborate, the body being shaded by cross-lines, zigzags in field.

13. From large bowl with dark brown decoration on interior. Brown decoration rather faded. Stars in field; above zigzag band and meander.

The birds are shaded as in **12**, the tails sharply defined. It is noteworthy that the birds are alternately large and small,[1] a feature I have not observed elsewhere. The use of the star as an ornament in field is by no means usual.

14. Birds treated rather freely. Checker square in field.

15. The birds are here represented with heads down, feeding; this type, though by no means rare, is not as common as the type that is represented by **11**–**13**.

b.

In Group **b** the water bird becomes the chief feature and is generally treated in a simple fashion, the bird standing alone in the centre of a panel formed by vertical and horizontal lines. A transitional type from **a** was observed in the case of several fragments from the neck of a large vase (probably an amphora) where a row of birds was represented, each one separated from the other by two patterns, one consisting of two upright lines with horizontal lines between and the other a vertical guilloche treated as a silhouette. The technique was poor and the birds drawn as silhouettes without any shading. Other cases were observed where the panel was bounded by rows of horizontal zigzags one above the other.

16. From a bowl about 17 cm. in diameter; height cannot be determined. Dark red clay. Brilliant black glaze on interior, black decoration. Several other fragments found.

The bowl seems to have been divided into four panels, the intervening spaces being filled by a meander pattern (not visible on **16**). The birds are treated as silhouettes. The ornament in field is a common one in this style.

17. From a large vase. Brick red clay, with decoration varying from black to brown. The birds are more elaborately treated with stars as ornaments in field (cf. No. **14**). From several other fragments belonging to the same vase it seems probable that the birds were the principal theme, the rest of the vase being ornamented with purely Geometrical motives.

The ornaments in the field on most of the fragments of type **b** are lozenges, zigzags, concentric circles, stars, etc. The treatment of the water bird as an ornament in the field will be discussed later.

B. Horses.

One of the most characteristic features of the Geometric style is the fondness for representing horses, either singly, in pairs ("Heraldic" scheme), or attached to a wagon. The horse in Greek art was a well known feature before this period; one recalls the grave stelae, and the sword blade from Mycenae. Also on Mycenaean vases of the fourth class the horse may be found, although not so often as to assume that the animal

[1] A bowl from Boeotia (*Jahrb.* XIV. [1899], p. 83, fig. 40) shows two large and two small water birds, which are arranged in a panel, and not, as here, in a frieze.

was a great favorite with the Mycenaean potters. To account for its popularity during the Geometric period is difficult. From the Homeric poems we know what a part was played by it in the Mycenaean civilization, so that we cannot assume a sudden increase of popularity for it during the later period. The chief point of difference lies in the fact that during the Mycenaean period the horse is always used as a yoke-animal, never as a beast of burden. In the Geometric period we find frequent representations of the horse as a mount as well as a beast of burden. A very superficial study of the Mycenaean vases shows that the drawing of animals was more or less tentative, with rather unsatisfactory results. Of course the Vaphio cups show that it was possible for the Mycenaean artists to reproduce animals with wonderful accuracy, but then the toreutic art of the Mycenaean period is far in advance of that of the vase painter. Hence we can only assume that an increase of skill in drawing on the part of the vase painters was responsible for so many representations of horses on Geometric vases. Being a common factor in the life of the period, it could not be ignored. But it is certain that the horse did not become popular until the Geometric style was firmly established, since it is not found on the earliest vases of the style.

a.

18. From rim of large bowl. Dark red clay, with brown glaze on interior. Head and rear part of two horses. On the inside, below the rim, a band of vertical and horizontal lines crossing each other at right angles. No ornaments in field.

Numerous other fragments having a single horse, or a band of them, were found, but all in bad condition, showing in most cases only the head or hind-quarters of the animal.

19. Part of the foot of a large bowl. Red clay, with darker core, lustrous black and brown decoration. Frieze of horses, with rays, stars, *swastikas*, etc., as ornaments in field. Below, two zigzag bands (shaded). Separated by a moulding appears what may be another similar frieze.

Though the shape of the base cannot be determined, it is probably a large bowl mounted on a tall foot, somewhat similar in character to one in Athens (*Jahrb.* XIV. [1899], p. 81. fig. 37), but with a taller foot.

The majority of the fragments with a frieze of horses had a wealth of ornaments in the field. The type of horse was generally the same in all, the only difference lying in the quality of the execution. One fragment (without ornaments in the field) showed a frieze of horses grazing.

20. Greenish clay, with dark brown decoration. Horse in panel. Duck, meander, *swastikas*, and zigzags as ornaments in field. Above, zigzag band (shaded).

The treatment of the horse by itself in a panel is not as common as in the case of the birds. Only a few other similar fragments were found. The bird is here used as an ornament in the field. Whether the zigzag which falls from the bird's beak is intended to represent a worm is uncertain. It is of frequent occurrence, not only on the Heraeum fragments but on Geometrical vases found elsewhere.

b.

The representation of two horses facing each other in the so-called "Heraldic"[1] scheme is of common occurrence on vases of this style. The symmetrical arrangement of motives in this same scheme was a characteristic of the Mycenaean fourth class. The usual arrangement called for the figure of a man between the two horses; however, it is

[1] For a discussion of the "Heraldic" scheme, see Curtius, 'Wappengebrauch und Wappenstil im Alterthum,' *Gesammelte Abhandlungen*, II. pp. 110 ff.

certain from other fragments belonging to the same vases as **21** and **22** that the space between the horses was occupied by ornaments in the field, and fragments from other vases show this same peculiarity.

As the treatment of the horse is that peculiar to the style, no further comment is necessary. Only a very few fragments showed a lack of ornaments in the field; the greater part have a very elaborate series of ornaments, with many variations. In each panel (the group is almost invariably in panel form) five spaces may be found, two above and two below the bodies of the horses, and one between them. The filling of the latter space by a human figure will be discussed later. The most usual ornament in the spaces above the bodies is a simple meander or zigzag, sometimes combined. Besides these we find rosettes, lozenges, squares, crosses, circles, etc., in fact, all the common Geometric themes. Water birds are occasionally introduced, singly or in a row.

The space beneath each body is usually occupied by a fish or a water bird; the other Geometric motives are often used, but by no means with the same frequency. In case the space to be filled is a very large one, half meanders, crosses, rosettes, etc., are employed as filling around the body of the fish or bird.

21. Reddish clay, with red brown decoration. Noticeable is the object beneath the horse's belly, a shaded half circle with lozenge chain. Several other fragments of this vase were found.

22. Coarse greenish clay, with greenish brown glaze on interior, and brown decoration. Row of water birds above on a dotted meander. Between the hind legs a water bird, between the fore legs a vertical "Running Dog" pattern. Beneath the belly a square containing a rosette. Several other fragments of this vase were found.

C. Men.

Although the human figure is introduced into Mycenaean vase-painting, its use there is not very common. As the earliest examples of Geometric vases do not employ it, there is good reason to believe that not until the later period of the style was its use at all universal. Once introduced, however, its development was rapid, and in the latest examples of Geometric ware we find the human figure as the chief motive of decoration.

Among the Heraeum fragments this motive plays a large part. At the time of its introduction the use of ornaments in the field seems to be firmly established, and fragments with human figures, but without ornaments in the field, are rather scarce. Such cases as do occur are marked by an advanced technique, which forbids their belonging to the earlier period of the style.

a.

Whether the introduction of the human figure in the "Heraldic" scheme between two horses is earlier than in the frieze cannot be told. The former is by far the more common, and on the Heraeum fragments is the most usual motive. The general type is always the same: a nude male figure, in profile, holding a horse with each hand,[1] either by a halter, or else grasping the horse's nose. Such variations as occur lie in the different ornaments in the field and in the treatment of the man and horse — either less or more advanced.

PLATE LVII.

1. Light reddish clay, with decoration in light brown. This is probably one of the earliest instances of the type, the figures being hardly more than a series of straight lines such as a child might draw.

2. From a large vase. Dark red clay, with brilliant dark red decoration. Here the hips and

[1] *Ann. dell' Inst.* 1872, tav. d'agg. I. 1; *Jahrb.* XIV. (1899), p. 34, fig. 12.

legs of the man are treated more naturally, and the distinction between the nose and chin sharply emphasized.

3. Clay and technique similar to PLATE LVI. 19, but rather more advanced in style. The legs are here extended beyond their natural length, and the calf is sharply marked. Meanders as ornaments in field.

4. From a very large vase, perhaps an amphora. Reddish clay, with dark red decoration. At least a dozen other fragments belonging to this vase were found, showing that the horse and man were treated in panels, and the rest of the vase ornamented in the usual Geometric fashion. The head of the man has a very curious headdress, and the neck ridiculously lengthened. Such exaggeration is not common. Fish as ornament in field.

It sometimes occurs that a man and one horse are represented in a panel, the man leading the animal. As such cases generally have a corresponding group on the other side of the lines bounding the panel, it cannot well be called a *genre* scene, although the "Heraldic" idea does not appear so prominently.

5. Reddish yellow clay, with dark brown decoration. Here a distinct profile is given to the man. For the object in his left hand, which may be a staff, I know of no parallel instance on Geometric vases.

6. From a bowl; reddish clay, with dark red glaze on interior, red decoration, fairly lustrous. Rim sharply separated from the shoulder. Wave pattern on rim.

In spite of the extremely archaic appearance of this fragment we cannot but assign it to the later period. The eye of the figure is clearly defined, and an attempt is also made to show the fingers. It is uncertain whether the object in the figure's left hand is a whip or a halter.

b.

The use of the male figure treated singly or in a frieze is not as common on the Heraeum fragments as on the Dipylon vases.

7. Rim of bowl. Dark red clay, with lustrous dark red glaze on interior. Clay shows traces of burning. Frieze of men to right; the right-hand figure holds a kithara in his hands.

That the object in question is really a kithara[1] would seem certain. That held by the terra-cotta figurines from Keros (*Athen. Mitt.* IX. p. 156, pl. vi.), which is thought by Koehler to be the *sambuka*, is probably the earliest instance of a lyre in Greek art. This fragment, however, would seem to show one of the earliest instances of a lyre in vase painting.

Friezes of men, especially on the rims of bowls, were quite common at the Heraeum, and were found on numerous other fragments.

Another type, though found on but a few fragments, in bad preservation, is a frieze of warriors, the shield[2] covering the entire body, and the two spears projecting diagonally upwards from the shield on each side of the head.

8. Rim of bowl; greenish clay, with black decoration. The figure undoubtedly formed part of a frieze.

This fragment is probably one of the later essays; the nose and chin are sharply defined, and the eye is incised. The body seems to be covered with a cloak.

9. Reddish yellow clay, with lustrous brown red decoration. Bodies of two men joined together; double axe and stars in field.

At first sight it would appear that the artist had tried to represent some monster of the Geryon

[1] Cf. the fragment from Amyklae (*Jahrb.* XVI. [1899], p. 84, fig. 42), and an early Attic vase, Baum. *Denkmäler*, p. 1948, fig. 2078.

[2] One or two of our fragments showed round shields, as on a vase in Athens (*Jahrbuch*, XIV. [1899], p. 197, fig. 61). Several had only the upper part of the shield preserved, which had a pattern of dots below the rim. Judging by the skyphos from Eleusis (Ἐφημ. Ἀρχ. 1898, pl. v. 1), it seems most probable that the shield was of the Boeotian type, which is fairly common on Geometric vases. Cf. *Jahrb.* XIV. (1899), p. 85, fig. 44.

type. The most probable explanation is that two figures, one behind the other, were represented, and that the artist, having no knowledge of perspective, got decidedly mixed in his drawing. The double axe is quite a common ornament in field, but whether there is any connection between this ornament and the Labyrinth in Cnossus (the house of the Double-axe, according to Evans) is decidedly problematical.

c.

Fragments representing *genre* scenes at the Heraeum were comparatively scarce. As a rule the technique of such fragments is slightly better than the average. That such should be the case is not surprising, since in a style like the Geometric the introduction of *genre* scenes would come only after the treatment of the ordinary motives had been thoroughly developed and some new treatment was demanded.

10. From a large bowl; reddish clay, with lustrous dark brown decoration on interior; decoration a brilliant brown.

A battle scene is evidently represented. The central warrior is preparing to shoot an arrow, and it may be presumed that the other two figures are about to do the same. At the right of the fragment is the foot of a fourth warrior. On the left an arrow as an ornament in field.

The treatment of the bow is precisely identical with that on the fragment of the silver vase from Grave IV. at Mycenae (Tsountas, Ἐφημ. Ἀρχ. 1891, p. 19, pl. ii. 2), and the Mycenaean sword blade from the same grave (*B. C. H.* 1886, pl. ii. 3, 4). This would show that during the Geometric period the same bows were employed as in the Mycenaean epoch. A comparison of the figures on the large Dipylon vase in Athens (*Mon. dell' Inst.* IX. pls. 39, 40) shows that the arrow which seems to pierce the figure with the bow is supposed to be girded to the side[1] in lieu of a quiver.

11. Reddish clay, with lustrous red brown glaze on interior. Lustrous black decoration.

That a boxing match over a tripod as the prize of the contest is represented is the most probable explanation. At first sight it would appear that the left-hand figure is holding out some object to the other, but a closer examination shows that the object in question is really the figure's arm (since the fingers are denoted) very badly drawn. Similar contests are rare on Geometric vases. Cf. the bowl in Copenhagen (*Arch. Zeit.* 1885, pl. 8, 2), where a similar contest without the tripod is represented. (This fragment has already been published by Laurent, *B. C. H.* 1901, p. 150, fig. 3.)

12. Reddish clay with red brown decoration. Man in chariot driving. As three tails are visible, it seems probable that a quadriga was represented. Two other fragments showed the same scene, but not enough of the chariot to draw any conclusion as to its form.

13. Brick red clay, with brilliant black glaze on interior, black decoration. On the right the upper part of some animal; in centre, a man about to shoot an arrow (as in **10**); and on the left the prow of a boat, with the back of one of the rowers. Fishes as ornaments in field near the boat.

This fragment, as far as technique is concerned, belongs to a class which will be considered later. It is the only fragment found at the Heraeum on which a ship[2] was represented. The treatment of the boat, however, differs materially from the usual boats found on vases of this period. Only a portion of the bow is preserved, but it is plain that the stem of the vessel did not end in a sharp point, as in the modern ram, but was shorter and blunter. Also, the line of the bulwark curves backward instead of directly towards the bow. (Cf. Rayet et Coll. *Hist.* p. 29, fig. 20; Baumeister's *Denkm.* p. 1597, fig. 1658.)

No other fragments which could properly be included under the head of *genre* scenes were found.

[1] Whether this is a sword is extremely doubtful. Cf. *Athen. Mitt.* XVII. (1892), p. 219, fig. 7. On a skyphos from Eleusis (Ἐφημ. Ἀρχ. 1898, pl. v. 1 *a*) the warrior seems to be armed with both sword and quiver.

[2] For discussion of this motive, cf. Pernice, *Athen. Mitt.* XVII. (1892), p. 285 ff. The prow of the galley on one fragment seems to be somewhat similar to that of the galley on a skyphos from Eleusis (Ἐφημ. Ἀρχ. 1898, pl. v. 1).

D. Women.

The female figure is treated in but one way on the Heraeum fragments — as part of a row of similar figures in a frieze. Though numerous fragments were found containing each a single figure, it is probable that such figures are only part of the regular row. All the figures followed the same type, and varied only in a few minor details. They are draped (no instance of an undraped figure, as on the Dipylon vase in Athens, already referred to, was found), and held a branch in their hands. From the waist to the feet outside of the garment are drawn one, two, or three parallel lines. No satisfactory explanation of these lines is forthcoming; they are not always used on Attic work, but on the Heraeum fragments no female figure is represented without them.

14. From a small jug. Dark yellow clay, with dark brown decoration. The surface of the clay has been dented in a rather curious way, perhaps intentionally.

It is uncertain whether the two figures here are inclosed in separate panels, or whether the vertical lines separate two friezes; the latter is more probable. This is one of the earliest fragments on which the female figure occurs.

15. Dark yellow clay, with black decoration. The heads are here seen *en face*, the hair forming a large bunch on either side of the face.

16. Similar clay and decoration. Heads are in profile, the nose and chin sharply defined. Cf. fragment in museum at Argos (*Jahrb.* XIV. [1899], p. 86, fig. 45).

In **14–16** the figures are treated entirely as silhouettes. We now find a series of fragments in which a pattern of squares or lozenges is marked on the skirt of the dress.

17. From a large bowl about 31 cm. in diameter. Dark red clay, with lustrous black decoration, burnt dark red in places. Inside the rim, series of four narrow and two broad parallel bands, the upper bands separated at intervals by vertical lines.

On rim, in centre a male figure jumping, behind him a water bird and lower part of a male and female figure; to right, five female figures carrying branches, and traces of a sixth. Below, meander pattern. Lozenges, *swastikas*, and rays as ornaments in field.

That a dance is represented here seems probable. It is certain that two rows of women were represented, that on the left led by a man. The ancient form of dancing is paralleled by the dances in modern Greece, where a row of women join hands with a man at the head. The jumping figure (cf. similar figure on the Copenhagen vase) and the water bird are probably used as ornaments in field to divide the two groups. The women have the usual series of tails, with a lozenge pattern on the skirt. The row ends at the side in a symmetrical fashion, as the left-hand figure of the row holds in her right hand an inverted branch; and on the extreme left of the fragment the lower part of a similar branch may be detected. It is probable that the man leading the left-hand group also held a branch in his hand, as in **19**. The treatment of the water bird is curious, a circular space in the body being filled by a *swastika*.

18. Dark gray clay, with brown decoration. Double lozenge pattern on the skirt. The eyes of the figure are denoted. The right-hand figure is probably the end of the group, as she does not hold a branch in her left hand.

19. Dark gray clay, with black decoration. Inside, lustrous black band. Checkerboard pattern on skirt. As in **17** the row of women is led by a man who, together with the woman, holds the usual upright branch, with the addition of the inverted branch in the woman's hand.

20. Dark gray clay, showing traces of fire. Black decoration and black glaze on interior. Dotted square pattern on skirt. It is doubtful if any tail is indicated. The object to the right seems to be the fore legs of a horse.

21. Red clay, with black decoration. The skirt is very thin at the waist, and flares sharply outwards like a bell. Two tails are indicated.

E. Miscellaneous.

Besides the animals already mentioned, we find others (generally deer) which are invariably treated in two ways — either as ornaments in the field, or else as a subordinate frieze. In many of the friezes, horses, birds, deer, etc., are combined.

22. From a large vase. Dark red clay, with lustrous red brown decoration; on interior, lustrous dark brown glaze. Frieze of deer to right, with zigzags as ornaments in field. Above, meander pattern.

As horses in the Geometric style invariably have long tails, it is certain that these are not horses. To represent the animals looking over their shoulder is the usual type. Variations occur where the four legs of the animals are bent sharply under the belly. (Cf. Copenhagen vase.)

23. Dark red clay, with brilliant red glaze on interior, decoration in dark brown. Horse and deer.

The deer is treated here as an ornament in field. It might be considered to be a foal, but the short tail is rather against such an assumption.

24. Light reddish clay, with black decoration. Lizard[1] or scorpion as ornament in field. What the other object represents is doubtful.

25. Light gray clay, with black glaze inside. Fishes and water bird. Whether this fragment belongs to a plate or the bottom of a shallow bowl is doubtful.

The animal on PLATE LVII. 13 may be a panther. No case of a dog occurs on any of the Heraeum Geometric fragments.

OTHER MISCELLANEOUS TYPES.

The common origin of all the fragments previously considered seems fairly certain. A small number of fragments were found which seem to form a class by themselves, and are much more closely related to pure Dipylon ware, being of a finer, cleaner clay, and with a decoration more lustrous and careful than the preceding fragments. It is possible that they may be simply examples of the best Geometric technique at the Heraeum rather than Attic importations. But beyond emphasizing the difference which exists between them and the other Geometric ware at the Heraeum, I do not venture actually to attribute to them an Attic origin.

All these fragments show a use of purely Geometric motives, the human or animal figure occurring but seldom. What period to assign them to is hard to say; on technical grounds they seem of later manufacture, but from their style and a comparison of ware recently found in Attica they seem to belong to the earlier period. To this class belongs the fragment with the boat, PLATE LVII. 13.

PLATE LVIII.

1. From rim of bowl. Reddish clay, with lustrous black decoration, brilliant black glaze on interior. Rim ends in a moulding, and the line between rim and shoulder is sharply defined. Meander pattern. On each corner a dotted circle. Several other fragments of this vase were found.

2. Brick red clay, with red brown decoration; glaze on interior varying from black to red. Usual Geometric decoration. Several other fragments of this vase were found.

3. Cover. Reddish yellow clay, with brilliant black decoration. Probably belonged to a vase similar to one in Herakleion in Crete (*Jahrb.* XIV. [1809], p. 37, fig. 15).

4. Dark red clay, with very brilliant black decoration, burnt red in places. Lower part of water bird frieze.

Several other fragments from different vases of exactly similar technique were found. The contrast between the red and black is so conspicuous as to appear intentional.

[1] Cf. *Jahrb.* XIV. (1899), p. 84, fig. 42.

5. From rim of small bowl. Yellow clay, with black decoration, and black glaze on interior. Technically this fragment was one of the finest of this style found at the Heraeum.

6. Base of a pithos-shaped vase of light red clay. The shape is unusual. One exactly similar has recently been found in Attica.

The fragments and vases which now follow, which belong to the regular Geometric types already discussed, present certain peculiarities which demand a separate consideration of them.

7. From the support of a large vessel. Dark red clay, with red brown decoration. Horse and double axe.

This fragment seems rather more Boeotian in treatment, though the clay lacks the white stones characteristic of Boeotian ware.[1] The horse varies from the usual type, as the mane is composed of wavy streaks which are drawn down to meet the neck and occasionally do not touch the neck at all. As several other fragments exactly similar in technique were found, it is clear that **7** formed the support of some vessel, probably divided into legs, as on several of the fragments the edge of the leg was sharply defined. Two other fragments which may belong to the same support were legs, with two broad diagonal lines drawn from each corner crossing each other in the centre.

8 a and **b**. Two fragments of a cover; diameter, 0.376 m.; height, 0.038 m. Dark gray clay, with black decoration. In the centre a large wheel with a deer; in the vacant spaces, the whole bounded by lines, lozenge chain and zigzags. On the side an adaptation of the "Running Dog" pattern, the ends connected together, and triangles as ornaments in field. As no decoration or glaze exists on the interior, it seems certain that it was a cover. Covers as large as this in the Geometric style are unknown to me.

9. Tray. Length, 0.18 m.; width, 0.11 m. Brownish clay, with the inside entirely covered with a reddish brown glaze. The decoration is placed on the outside, and consists of zigzags on the sides and water bird friezes on the bottom, separated by zigzag sand lozenge chains. Missing portions restored in plaster.

10. From similar plate; handle.

11. From similar plate; corner.

9–11 are the most important examples of about twenty fragments which belonged to trays or plates of precisely the same form and design. They are slightly narrower at one end (the restoration of **9** is not quite exact) and are provided with a handle at each end. Several fragments showed a meander pattern at the base.

Their principal interest lies in the fact that very similar trays have been found at Aegina and nowhere else.[2] At Aegina, however, all the trays found were rectangular, and did not show a different diameter at either end. As the microscopical analysis of these trays (cf. p. 65, note) made by Dr. Washington shows the presence of augite, which was found in the trays from Aegina, and is a characteristic feature of the island, it would seem fairly certain that these particular trays were imported from Aegina. If this be true, in these trays we have the only authentic instance of an importation from Aegina into Argos, since, according to Dr. Washington, all the Geometric fragments from Aegina which were examined by him are identical with those from the Heraeum, and show none of the distinctive features of the island. Moreover, they would seem to be the only instance of a local fabric in Aegina, which until now has not been demonstrated. (Cf. Loeschcke, *Athen. Mitt.* XXII. [1897], pp. 259–264.) They furnish, at any rate, a conclusive proof as to the relation between the two states, which we have already assumed to exist (cf. p. 64). I do not, however, agree with Stais in assigning them to the end of the seventh or the beginning of the sixth century; from a comparison with the other fragments of the Argive and Geometric styles found at the Heraeum, they seem to my mind at least a century earlier.

[1] *Jahrb.* III. (1888), p. 327.

[2] Ἐφημ. Ἀρχ. 1895, p. 262 ff., pl. xii.

12 a and **b**. Two fragments of a pinax. Greenish yellow clay, with brown decoration faded.

a. Length, 0.10 m.; width, 0.085 m.

b. Length, 0.62 m.; width, 0.10 m.

The design, as far as it can be restored, consists of two female figures bounded by four elliptical bands, and the usual Geometric ornaments in field; outside of the ellipse a row of water birds. The dimensions of the pinax cannot be estimated.

13. Similar clay and technique. Undoubtedly belonged to a pinax whose ends were slightly curved. Water birds in panels. Edges are toothed like a saw.

(As **12** and **13** were taken from a photographic plate with a slightly different scale, they are slightly smaller than they appear. The difference between this scale and that of the other fragments on PLATE LVIII. is 6 to 5.)

There still remain to be considered a few vases which are either intact or else in such condition as to make their form certain.



FIG. 42.

Fig. 42. Amphora. Height, 0.495 m.; diameter of opening, 0.235 m. Part of neck, one handle, and various parts of the body supplied in plaster.

On edge of rim, zigzag band; on neck, vertical and horizontal series of zigzags bounding a panel of interlacing lozenges with a black centre. Below, narrow band of vertical zigzags and double crosses. Handles in fine plastic bands. Below each handle a lozenge.

A. Horse and rider to right. The rider (bearded, with three strokes to denote his hair) clad in a short chiton, which seems to be tucked up around his waist, holds in his left hand the leading rein and in his right hand a whip: chiton ornamented with vertical lines. The horse is more carefully drawn than usual, with the eye clearly defined. No signs of a mane can be detected. On either side of the horse, a fish with a single vertical meander along the body.

B. Exactly the same, save that the horse has no rider.

On base, single meander pattern.

This amphora was the only large Geometric vase the Heraeum yielded which could be restored almost entire. That it is one of the latest examples of the style seems probable, since the body is not entirely covered with decoration and the horse is represented as a beast of burden, not as in the earlier types attached to a chariot or in the usual "Heraldic" scheme.

A jug was also found intact, 10 cm. in height, of precisely the same shape as *Jahrb.* II. (1887), p. 50, fig. 9, with similar decoration to *Ann. dell' Inst.* 1872, tav. d' agg. K. No. 3.

Several small skyphoi with vertical and horizontal handles, their sides ornamented with meanders and zigzags, were found.

Fig. 43. Height, 0.18 m.; diameter at base, 0.28 m.; at top, 0.21 m. Red clay, with red

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Fig. 43.

To assign this vase to its proper place is not easy. It is almost identical in shape with *Ann. dell' Inst.* 1881, tav. d' agg. R. 1 and 2, except for the lack of handles. These are said to have been found on a similar vase from Chiusi (v. *Bull. dell' Inst.* 1884, p. 178, 179). But no trace whatsoever of a partition dividing the vase inside into two cups can be found, so that it is impossible that it should have been used in the same fashion as the Italian vases. (For discussion of their use, see Helbig, *Das Homerische Epos*[2], p. 361.) Nor is there any reason to suppose that would be needed on any support handles of a vase.

Fragments representing such supports (cf. Plate LVIII. 7) were found.

About two hundred or more fragments belonging to one vase were found. This was evidently an amphora similar in shape to the large Dipylon vases in Athens,[1] of a light reddish clay, burnt in places, and must have measured nearly one and a half meter in height. No reconstruction of the vase was possible, and the foot could not be found. The vase was entirely covered with ornamentation, that on the body consisting of a series of large wheels,[2] arranged vertically and horizontally, separated by panels containing the usual "Heraldic" motives. Panels again were arranged on the shoulder, and the neck covered for the most part with zigzag and meander patterns. All fragments showed the usual Geometric types.

In conclusion it remains to enumerate briefly some of the forms of vases not mentioned before, which from the evidence of various fragments must have existed at the Heraeum. The forms are taken from Wide's articles in the *Jahrbuch* for 1899 and 1900.

Jahrb. 1899, p. 29, fig. 1. This form was represented by numerous fragments of feet, handles, and rims.

Ibid. p. 34, fig. 11. Several similar handles were found.

Ibid. p. 38, fig. 20. Represented by handles.

Ibid. p. 80, fig. 34. Many fragments, especially of feet, belonged to a similar vase.

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Ibid. p. 205, figs. 71, 72, and the following pages. Large numbers of fragments belonging to similar jugs, and handles with a cross-piece were found. At the same time it is impossible to state whether all the combinations illustrated in Wide's article were found.

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[1] Cf. *Jahrb.* XIV. (1899), p. 201, fig. 69.

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CHAPTER IV.

THE ARGIVE STYLE.

The Argive (so-called Proto-Corinthian) style is not only the most characteristic vase fabric at the Heraeum, but the one best represented by entire vases as well as fragments, and seems to have been the most popular style in the Argolid from this end of the Mycenaean epoch down to the beginning of the Corinthian style, a period of perhaps from three to four centuries.

The term "Proto-Corinthian,"[1] as is well known, was invented by Furtwängler and applied by him to certain vases, of which the small lekythoi with human and animal figures as the chief scheme of decoration are the best examples. Furtwängler never intended this name as an exact designation, but used it to show that this class bore a close relation to the Corinthian style which it preceded.

Since the invention of this term twenty years have elapsed, and in that time the number of these vases has increased. Originally not more than half a dozen examples from Thebes, Tanagra, or Corinth were known, but we now have numerous examples from Attica, Aegina, Eleusis, Tiryns, Argos, Syracuse, Megara Hyblaea, Southern and Northern Italy. To the class identified by Furtwängler has been added a series of vases the decoration of which consists entirely of fine parallel lines encircling the body of the vase and Geometric motives. At the same time the term "Proto-Corinthian," though universally adopted, has never been considered thoroughly satisfactory, and numerous attempts have been made to discover the real provenience of the style; none of the sites proposed as the original home of the style (Chalcis,[2] Corinth, Sicily, etc.) has yet been universally accepted. It has been generally believed that the style was the outcome of the Geometric ware[3] and originated about the middle of the eighth century.

It appears to me that the Argolid is the original home of this style, and I venture to adopt a new system of classification and chronology, which differs materially from that heretofore offered.[4] The conclusions about to be stated have been forced upon me after a careful study of the Heraeum fragments, and while I am far from claiming them to be the only possible ones, they form the basis for the whole of this chapter. Briefly, the so-called Proto-Corinthian style is Argive in its origin, and a direct offshoot of the Mycenaean style, being contemporaneous with the Geometric.

From the very beginning of the excavations, when it was seen how large a proportion of the vase fragments was formed by this ware, in 1892 Professor Waldstein asserted that it was really Argive. Since then Professors Furtwängler[5] and Loeschcke[6] have also come to the same conclusion. The arguments in favor of its Argive origin are: —

(*a*) The quality of this ware found at the Heraeum.

(*b*) The steady development from the earlier periods, especially the Mycenaean.

(*a*) The style is found in greatest quantities outside of the Argolid, in the Necropole del Fusco at Syracuse,[7] and at Megara Hyblaea,[8] and Orchomenos.[9] The amount fur-

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nished by the three most important excavations in the Argolid, the Heraeum, Mycenae, and Tiryns, more than equals that of the rest of the Greek world, including the Sicilian excavations. With such a vast amount found in the Argolid alone, it is extremely improbable that any other state should have been the inventor, or that the importation of the style should have taken place into a state which during the Mycenaean period had a flourishing vase industry of its own. Furthermore, as we have already pointed out, so few types were found at the Heraeum which were clearly made outside of the Argolid, that we must hesitate before calling any doubtful style a foreign importation. And as the largest part of the ware found in the Argolid is furnished by the Heraeum, it is there rather than at Mycenae that the origin of the style must be sought. In Aegina the style shows the same development as at the Heraeum, but as no attempt has ever been made to show that Aegina had a vase industry of her own,[1] and as we know that historical evidence points to a close connection between Argos and Aegina during the eighth and seventh centuries, the vases of this style found at Aegina may well have been imported from Argos.

(*b*) As far back as 1887, Dümmler[2] had pointed out the fact that fragments of this style had been found at Aegina in the lowest levels along with Mycenaean fragments, and the same is true at the Heraeum, though, as we have seen, the presence of definite chronological levels was not observed. This would show clearly that some vases of the style are as old as the Mycenaean period. Many fragments of this ware are found at Aegina as well as at the Heraeum, which bear the strongest resemblance to the Mycenaean style. Moreover, the steady development of the style from its beginning can be better traced in the Argolid than in any other site, where the earliest examples are not to be found. Therefore, as Aegina cannot really claim the origin of the style,[3] the enormous quantity of it found at the Heraeum, as well as the steady and complete development, would make it reasonably probable that the style originated in the Argolid.

As stated in the Introduction, the all-pervading characteristic of the Argive style is, as Professor Waldstein maintains, "Linear," pure and simple. We have already seen that the Primitive and Mycenaean styles were Linear in their origin, and that the latter, after passing through the pictorial stage when naturalism prevailed, returned in Class IV. to the Linear principle again, which, as we know from the presence of the broad and fine bands on the bodies of Mycenaean vases, was never entirely lost.

Practically, therefore, the earliest specimens of the Argive style are small vases, akin in clay and technique to the Mycenaean style. The question here arises, whether such vases form a step beyond the Mycenaean style, or whether they are only the best illustrations of a continuous principle which originated in primitive times, and arrived at its perfection at the end of the Mycenaean period. Professor Waldstein maintains[4] "that the Proto-Corinthian development of the Argive-Linear is but the natural development out of the linear decoration as found in Argive vases at the Heraeum from the earliest Primitive vases through the dull-colored vases and the Mycenaean periods. In the two first periods (Primitive and Dull-colored) this linear decoration is in free-hand drawing, sometimes with rudest implements and in awkward and grotesque uncertainty of touch. This uncertainty corresponds to the ruder hand-made technique of the ceramist. The

[1] The plates mentioned on p. 116 and a few fragments of Mycenaean vases are the only vases known which were *surely* manufactured in the island; v. Introduction, p. 65, note.

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[3] Cf. p. 65, note.

[4] The words in quotation marks are Professor Waldstein's.

greater accuracy and skill in this linear decoration naturally comes in when the ceramist himself makes skillful use of the wheel, and produces such fine specimens of the potter's craft as are to be found with the rise of the Mycenaean lustrous vases. The parallel lines ornamenting the lower portions of these are thus firm and accurate. At the same time the feeling for 'free-hand' drawing has not died out, and in its turn advances with the progress of ceramic art during the Mycenaean period, so that when the feeling and desire for naturalism grows, the decoration above the lines reaches a stage of perfection comparatively as high in technique in these lustrous vases as is the linear decoration and the ceramic art in the shape and manufacture of the vase itself. In the larger vases of the Mycenaean period the linear decoration is thus never entirely superseded; while in the smaller vases it still maintains its predominance through this and all early periods. At the Heraeum, and we may say in the Argolid, the Linear principle of decoration, which finds its highest and purest expression in the later Argive (Proto-Corinthian) vases, had therefore never died out."

This theory of Professor Waldstein's I accept in part, and I agree with him that the Linear principle was never quite discarded even in the best period of the Mycenaean style. If it could be proved, as Professor Waldstein thinks, that from the Primitive times to the close of the Mycenaean civilization a distinct class of vases exists, which, though showing elements of Mycenaean decoration, have as their chief characteristic this same Linear principle, I should see no objection to accepting his theory entirely. This class I have not succeeded in finding, and I do not regard the various examples already quoted by Professor Waldstein as establishing the existence of such a class beyond question. It is true that there exists a large class of vases at the Heraeum, the date of which is not absolutely fixed, which show only the Linear principle; but whatever their date may be, I do not consider them as earlier than the end of the Mycenaean period, nor do the few scattered fragments with incised linear ornamentation, which may possibly belong to the acme of that period (though that point is extremely doubtful), constitute to my mind a distinct and unmistakable link between the Primitive times and the rise of the Argive style. It is possible to regard these same small vases as the beginnings of the Argive style, but only as the poorest examples of it. They show at least that they are the result of a principle which filtered through the Mycenaean civilization, just as a river flows through a lake, but which I, for my part, do not regard as a separate entity from Primitive times. Hence the earliest class of the Argive ware is probably an offshoot of the Mycenaean style. This class I shall call "Early Argive."

We have seen that some great movement (perhaps the Dorian invasion) in Greece caused a revival of the various Geometric or primitive motives at a time when the Mycenaean civilization was dead or dying, but when the Argive style had begun. Under the new influence the Argive style is quick to respond. Accordingly we find that as the Geometric style flourishes, the Argive style borrows freely the Geometric motives, but keeps them subordinate to its characteristic Linear principle of parallel bands as the main decoration. This is the class "Linear Argive," which forms the bulk of the style at the Heraeum and is widely represented in Sicily and Italy. The ordinary Geometric motives, zigzags, meanders, squares, lozenges, etc., are the ones most commonly used, and as the vases are generally of a small size, these motives are confined to the rims or shoulders, seldom if ever used on the body of the vase.

That the spread of Oriental influence in Greece caused the decline of the Geometric style is universally admitted. In the Argolid we find the Geometric style ceasing almost

abruptly, while the Argive style becomes, as it were, emancipated. The reason is simply that as this style was confined to smaller vases on which the Geometric motives played a subordinate part, the introduction of orientalized animals and human figures, together with the fuller development of ornaments in the field, did not necessarily interfere with its Linear principle of encircling bands. Again, as it was the distinctive style of the Argolid, and more popular than the Geometric, it was more easily influenced by the new ideas from the east. On the other hand, it would seem as if no attempt was made by the Argive potters to adapt the Geometric style to the new conditions, and hence it died out. In Attica, however, as the Geometric style affords the chief and only ware, some attempt had to be made to remodel the style to suit the new influence, or else to evolve a completely different fabric; accordingly we find the Dipylon style developing into the Early Attic. It would seem probable that the Phaleron jugs which illustrate this development were influenced in some way by the Argive style; such a theory, however, lacks actual confirmation.

We therefore find a third class of the Argive ware (Oriental Argive). It is to this class that the lekythoi in Berlin, London, and the other museums belong, which caused the invention of the term, "Proto-Corinthian." The period of its production probably lies in the early part of the seventh century, and it cannot have lasted beyond the end of that century, since the rise of the Corinthian and Early Attic styles probably supplanted it; also, no fragments of the style have been found at Naucratis. Cf. Cecil Smith, *J. H. S.* 1890, p. 176.

A difficult question is presented by the relation of Class III. to the Corinthian style. That the latter is directly developed from Class III. I see no reason to doubt. Couve[1] has recently denied such a connection absolutely, but as his arguments do not take the Heraeum fragments into consideration, they carry less weight.

Previous to the excavations at the Heraeum and at Aegina, Class III. was mainly represented by the small lekythoi already mentioned, but with the material from Aegina and the Heraeum the class is seen to include numerous larger vases of various shapes, the lekythoi being in the minority, so that any argument which bases the relation of the Argive style to the Corinthian on the lekythoi alone possesses little value. It is true that the lekythoi belonging to Class III., which show the most advanced technique, are not found in the Argolid, but in Thebes and Corinth. The shape, however, is fairly well represented at the Heraeum.

Now all these lekythoi found outside of the Argolid seem to be a finished product; they are similar to the Corinthian vases, but vases which show the transitional stages between Class III. and the Corinthian are wanting. Such connecting links, as far as I know, are found only at Argos and Aegina, but the quantity of true Corinthian ware found at both those sites is small compared to that found at Corinth or in other parts of Greece. As Corinth is universally admitted to be the originator of the Corinthian style, that point may be regarded as settled.

A survey of comparative history will help us here. We have seen that during the Mycenaean epoch the Argolid was the great source for the bulk of Mycenaean pottery found in Greece, just as Athens became the great producer of the Black and Red-Figure styles in after years. At the time we are considering (the seventh century), Argos had behind her centuries of skill in ceramic arts, with (presumably) a correspondingly large commerce. Athens did not begin her commercial activity until the eighth century,

[1] *Rev. Arch.* 1898, p. 213.

and Corinth, although beginning at this time to figure as a commercial factor, had not the previous years of industrial activity. If, then, the question arises as to which soil the spread of Oriental influence in Greece found most receptive, antecedent probabilities would certainly point to Argos. It would be most extraordinary to find such a finished product as Class III. originating in Corinth; as a matter of fact, the real difference between Class III. and the Corinthian style is simply this — a new influence at work upon skilled, as opposed to unskilled labor.

Argos, then, originates Class III. Its wide range does not militate against such an assumption; while not all the vases of this class so common outside of Argos are probably of Argive manufacture, still the bulk of them were most probably exported from Argos. That they do not exist in very large quantities at Argos itself is no proof to the contrary; it may perfectly well have been the case that local taste preferred the larger, finer vases, while the bulk of the smaller was exported. We know that during the sixth and fifth centuries the bulk of Attic work was exported to Italy, and were it not for the cemeteries of Chiusi, Ruvo, Nola, etc., etc., our knowledge of Attic pottery would be small indeed. At the same time it would have been perfectly possible for potters in Corinth, Thebes, Syracuse, and elsewhere to make copies of originals imported from Argos.

Hence it is probable that the importation into Corinth of Argive vases gave the inspiration to the Corinthian style. The ware evolved by Corinth was really a poor imitation of the Argive, and, owing to a lack of technical experience, the former started on a much lower plane than the latter. It is worthy of remark that as Class III. develops at Argos it becomes more like the Corinthian, only much finer in technique. This is not surprising, seeing that the external influence in both places was the same. The actual points of similarity between fragments of Class III. and the Corinthian style will be discussed later.

The question of clay is important, but difficult to define in default of microscopic investigation. In Class I. the clay is almost Mycenaean; practically the only difference is that the clay of Argive vases is lighter. The general treatment of glaze and decoration varies somewhat from the Mycenaean, in that the surface is seldom polished, and the paint less lustrous and applied less thickly. This is especially apparent in Class II. Here, however, the general scheme of decoration has advanced beyond all similarity with the Mycenaean. But though in the earlier classes the clay seems to be similar to that of the Mycenaean vases, the greatest difference exists between it and that of the Geometric vases, the Argive being of a different color (generally reddish), finer, cleaner, and lighter. In fact, during the later period of the Argive style, the art of making light vessels reaches its highest point; in some cases the clay is almost as thin as a sheet of very fine cardboard.

Owing to the smaller size of the vases the material is in much better preservation, and in almost every case the exact form of the vase could be determined. Hence it has been possible to evolve a classification based on the various forms. All through the style three shapes are most prominent — lekythos (oinochoe), skyphos, and pyxis; each exhibits many variations, which will be discussed later.

The use of some color, red, white, yellow, etc., applied to the vase after the first firing, is especially characteristic of the Argive style. As it is found in the Mycenaean and Geometric styles as well, its use will be discussed more thoroughly at the end of this chapter.

CLASS I.

EARLY ARGIVE.

We may include in this class many of the small jugs mentioned on pp. 99–101. Their only decoration is encircling bands with the occasional introduction of a Mycenaean motive, and as they belong to the end of the Mycenaean period they represent virtually the first stages of the Argive style. The forms used in this class are not very numerous; besides the jugs already mentioned we have examples of lekythoi, kalathoi, and small saucers, all three akin to various Mycenaean forms. That so few shapes are to be found is not surprising; the new style being still an experiment, potters would be likely to begin with familiar shapes.

Lekythoi.

Only one form of the lekythos was noticed; it is a one-handled jug of about the same form as *Myk. Vas.* XLIV. 63. It is, however, all through the Argive style one of the most popular shapes, and one which was clearly taken from a Mycenaean prototype.



FIG. 44.

Fig. 44. Height, 0.07 m. Southeast of Second Temple. Intact.

This lekythos is the most perfect specimen of Class I. found at the Heraeum. The clay is of a yellow tinge, and the decoration a lustrous black. In point of technique it possesses the greatest affinity with Mycenaean vases. The quality of the clay is of a slightly lighter and thinner texture, and the scheme of decoration distinctly linear. At any rate, its connection with the Mycenaean style is so strong as to show that it is certainly contemporaneous with the later period of that style.

Half a dozen similar vases were found in good condition, and as many more in fragments. The scheme of decoration was the same in all, some, however, having a series of fine lines beween the broad bands. Several other vases, in shape more like the jugs on p. 100, were found, on which the linear decoration was apparent, but of extremely careless execution.

Kalathoi.

These small vessels form a distinct series in the Argive style. Those which show the most advanced technique undoubtedly fall into Class II. To avoid confusion, they have been placed together. They seem to have been a common shape, since about fifty were found, most of them intact.

The earliest examples are hand-made, very small (not more than 35 mm. in height or 55 mm. in diameter), with one or two broad bands very carelessly applied. Next, a series of wheel-made specimens, some without any decoration, more commonly with several broad stripes. Finally a number of kalathoi, carefully made with a decoration of stripes in series of two or three. These last probably belong to Class II. In some cases the rim is formed of a series of plastic mouldings with dots on them, but without any other decoration on the vase except a glaze on the interior.

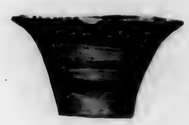


FIG. 45.

Fig. 45. Height, 0.04 m.; diameter, 0.07 m. Reddish yellow clay, with dark brown bands on interior as well as exterior. Cf. *Ann. dell' Inst.* 1877, tav. d' agg. A. B. 14.[1]

This kalathos belongs to the second series. Judging from its similarity to the bowl found in the Bee-Hive tomb (p. 95, **Fig. 30**) and the style of decoration, we cannot date it as any later than the end of the Mycenaean period.

[1] A kalathos of similar shape but with purely Geometric decoration has been found at Eleusis; cf. Ἐφημ. Ἀρχ. 1898, pl. ii. 17.

The hand-made vases were exactly similar save for a rougher style of execution. Slight but unimportant variations in the curve of the sides were found.

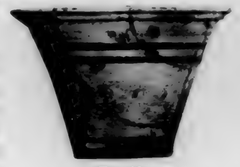


FIG. 46.

Fig. 46. Height, 0.068 m.; diameter, 0.10 m. Reddish yellow clay, burnt red at base, with red bands and dots on rim. Two bands inside. Found above the burnt layer on the west end of Old Temple Terrace.



FIG. 47.

Fig. 47. Height, 0.053 m.; diameter, 0.093 m. Red clay, burnt bright red at base, with dark brown bands above, red below. Dark red glaze inside. This change from brown to red in the decoration is evidently intentional.

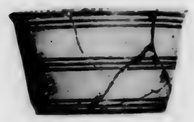


FIG. 48.

Fig. 48. Height, 0.045 m.; diameter, 0.078 m. Red, clay with yellow slip burnt red at base. Upper bands black, lower red, evidently intentional. Dots on rim, and five bands inside. A dozen other vases of this type were found.

The last three belong to the later series of the kalathoi, though the interval between them and the earlier ones is not great. The technique is far superior and the clay finer. They illustrate the three varieties of the form. Fig. 48 has a certain resemblance to the bowls already mentioned.

Saucers.

Just at this point we place a series of small saucers, of which quite a number were found. They vary from 3 to 5 cm. in diameter and 10 to 15 mm. in height, and would seem to be developed from the Mycenaean saucers (p. 96) with the addition of Argive decoration of concentric bands. Extra color (generally red) is added to some of the bands.

Two types may be detected.

a. Flat base, straight or sloping sides, with a sharply defined rim, flange curving outwards. A small boss is occasionally found on the interior, and small projections are often added to the rim as if for handles.

b. The base is either flat or curved, with curved sides, no flange to the rim.

a.

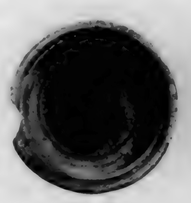


FIG. 49.

Fig. 49. Height, 0.01 m.; diameter 0.051 m. Light red clay, with black bands alternating with applied red bands on interior. No decoration on exterior.



FIG. 50.

b.

Fig. 50. Height, 0.014 m.; diameter, 0.028 m. Reddish yellow clay, with black decoration burnt red in parts. Bands inside with dots on rim. On exterior, below rim, broad band of applied red. Boss in centre.

Numerous other similar saucers were found and fragments of others of larger size. One, of which about half was preserved, measured 12 cm. in diameter and 5 in height. Clay and decoration were identical.

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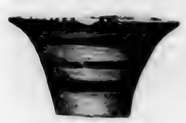


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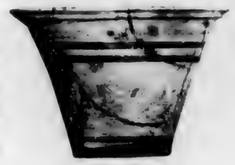


FIG. 46.



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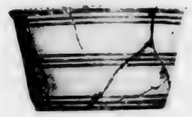


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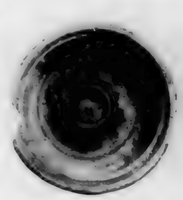


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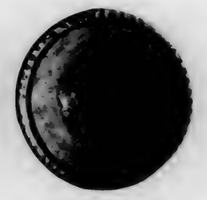


FIG. 50.

b.

Fig. 50. Height, 0.014 m.; diameter, 0.028 m. Reddish yellow clay, with black decoration burnt red in parts. Bands inside with dots on rim. On exterior, below rim, broad band of applied red. Boss in centre.

Numerous other similar saucers were found and fragments of others of larger size. One, of which about half was preserved, measured 12 cm. in diameter and 5 in height. Clay and decoration were identical.

Fragments of a few others were found, of a very fine thin clay, with a brilliant glaze and arrangement of lines exactly similar to the lekythoi below. These clearly belonged to Class II.

CLASS II.

LINEAR ARGIVE.

We now come to the class which includes almost all the Argive style, from its beginning in the Mycenaean times down to the rise of the Oriental influence, a period of perhaps nearly two centuries. Three periods may be noted, though as the transitional stages between them are so gradual, they will not be used as a basis for classification.

1. The survival of certain Mycenaean motives, still retained from the older style.
2. Pure linear treatment.
3. The introduction of the animal figure and the development of the Oriental influence. We also find three distinct technical methods. **a**. The ordinary technique, similar to that already discussed. **b**. The application of extra color. **c**. The contrast obtained by the action of fire, when half the vase is burnt bright red and half left in its natural decoration in black or brown.

The principal shapes are: —

Lekythos.
Oinochoe.
Skyphos.
Pyxis.
Aryballos.
Alabastron.
Plate.

Several other shapes will be met with, but such are comparatively rare and will be discussed as they appear.

Lekythoi.

Two varieties of the lekythos may be found, one rather globular in shape (cf. *Not. d. Scavi*, 1895, p. 138, fig. 15) and the other (*Berl. Cat.* pl. v. 102) slightly more developed. The latter shape is a modification of the former, and becomes very common during the later period of the Argive style.

Types.

Fig. 51. Height, 0.065 m. Bands on neck, handle, and body, with pot-hooks on shoulder, and below a broken wave pattern.

The shape of this lekythos is somewhat similar to the Mycenaean form (v. *Myk. Vas.* XLIV. 63). In the wave pattern we still see a survival of Mycenaean motives. A similar lekythos is at Syracuse (v. *Not. d. Scavi*, 1893, p. 473). From the form and ornamentation this lekythos may be considered as one of the earliest of Class II. Fragments of several other similar lekythoi were found.



FIG. 51.

Fig. 52. Height, 0.085 m. Part of rim broken away. Bands on neck, handle, and body, Geometric snake on shoulder. Decoration in dark and light brown. Cf. *Not. d. Scavi*, 1895, p. 138, fig. 15; *Brit. Mus.* A. 1061.



FIG. 52.

This seems to be slightly more advanced in form than the preceding, and is a common type at the Heraeum. Half a dozen more examples were found, more or less intact, and fragments representing perhaps a hundred.

Fig. 53. Height, 0.075 m. On shoulder, two birds with a scroll between them. Incised lines.



FIG. 53.

Identically the same form as the preceding. As in the Geometric style, the birds are the first living subjects introduced on a vase. The heraldic scheme of the birds suggests the fourth class of the Mycenaean style. Cf. *Myk. Vas.* XXXVI. 364. This seems to be one of the earliest instances of the incised line.

The chief variation in these lekythoi lies in the ornamentation on the shoulder. The following types were noted in the fragments: —

Rays. These include several varieties. They are either single, radiating from the centre, or else double, one set radiating directly from the neck, alternating with a second set which radiate from a band drawn just around the neck; rays drawn in outline; rays composed of interlacing lines. All have their points outwards.

In some cases a second band of zigzags is added on the body just below the rays.

Checkerboard. This is generally used as a band on the body. The plain squares are occasionally dotted.

Lozenges. As an ornament in field on the shoulder, combined with a ray or pot-hook.

Fig. 54. Height, 0.06 m. Neck and handle restored; on shoulder ray pattern.



FIG. 54.



FIG. 55.

This is an example of the simplest form of this second type, of which about twenty-five more were found. The majority had a ray pattern around the base, and the place of one of the broad bands taken by a checkerboard band. Pot-hooks were occasionally found on the shoulder instead of rays.

Fig. 55. Height, 0.062 m. Yellowish clay, burnt red on one side. Circle of dots on rim. Sign like the letter H on handle, vertical zigzags on rim. On body, frieze of three animals. Below, rays. Above and below animal frieze, two lines of dark red paint applied. The vase is intact.

This lekythos represents the most advanced stage of the second type, and can equally well be considered as the first stage of Class III., or the last of Class II. In fact, it forms a link between the two, since the animal figure is now introduced, through the Oriental influence. A dozen more of this type were found intact, and at least a basketful of fragments belonging to similar vases.

The application of the extra dark red lines now becomes quite a feature in the style, and few vases belonging to Class III. are without it. Several lekythoi of this shape, without any animal decoration, showed this same feature. One was adorned with two broad bands of brown, on which six alternating thin stripes of purple and yellow had been applied. A similar instance is at Syracuse (Case VII. No. 2893).

Also several lekythoi were found with checkerboards on the body (with applied bands of dark red between), and a leaf rosette on the neck, similar to those in the Louvre, v. Pottier, *Vases de Louvre*, pl. xxxix. E, 309; cf. also *Mon. Ant.* I. p. 824 (from Megara Hyblaea). Several examples are in Rome (Museo Papa-Giulio) and Florence. The type seems to be very common.

Fragments of a few others were found, of a very fine thin clay, with a brilliant glaze and arrangement of lines exactly similar to the lekythoi below. These clearly belonged to Class II.

CLASS II.

LINEAR ARGIVE.

We now come to the class which includes almost all the Argive style, from its beginning in the Mycenaean times down to the rise of the Oriental influence, a period of perhaps nearly two centuries. Three periods may be noted, though as the transitional stages between them are so gradual, they will not be used as a basis for classification.

1. The survival of certain Mycenaean motives, still retained from the older style.
2. Pure linear treatment.
3. The introduction of the animal figure and the development of the Oriental influence. We also find three distinct technical methods. **a**. The ordinary technique, similar to that already discussed. **b**. The application of extra color. **c**. The contrast obtained by the action of fire, when half the vase is burnt bright red and half left in its natural decoration in black or brown.

The principal shapes are: —

Lekythos,
Oinochoe,
Skyphos,
Pyxis,
Aryballos,
Alabastron,
Plate.

Several other shapes will be met with, but such are comparatively rare and will be discussed as they appear.

Lekythoi.

Two varieties of the lekythos may be found, one rather globular in shape (cf. *Not. d. Scavi*, 1895, p. 138, fig. 15) and the other (*Berl. Cat.* pl. v. 102) slightly more developed. The latter shape is a modification of the former, and becomes very common during the later period of the Argive style.

Types.

Fig. 51. Height, 0.065 m. Bands on neck, handle, and body, with pot-hooks on shoulder, and below a broken wave pattern.

The shape of this lekythos is somewhat similar to the Mycenaean form (v. *Myk. Vas.* XLIV. 63). In the wave pattern we still see a survival of Mycenaean motives. A similar lekythos is at Syracuse (v. *Not. d. Scavi*, 1893, p. 473). From the form and ornamentation this lekythos may be considered as one of the earliest of Class II. Fragments of several other similar lekythoi were found.



FIG. 51.

Fig. 52. Height, 0.085 m. Part of rim broken away. Bands on neck, handle, and body, Geometric snake on shoulder. Decoration in dark and light brown. Cf. *Not. d. Scavi*, 1895, p. 138, fig. 15; *Brit. Mus.* A. 1061.



FIG. 52.

This seems to be slightly more advanced in form than the preceding, and is a common type at the Heraeum. Half a dozen more examples were found, more or less intact, and fragments representing perhaps a hundred.

Fig. 53. Height, 0.075 m. On shoulder, two birds with a scroll between them. Incised lines.



FIG. 53.

Identically the same form as the preceding. As in the Geometric style, the birds are the first living subjects introduced on a vase. The heraldic scheme of the birds suggests the fourth class of the Mycenaean style. Cf. *Myk. Vas.* XXXVI. 364. This seems to be one of the earliest instances of the incised line.

The chief variation in these lekythoi lies in the ornamentation on the shoulder. The following types were noted in the fragments: —

Rays. These include several varieties. They are either single, radiating from the centre, or else double, one set radiating directly from the neck, alternating with a second set which radiate from a band drawn just around the neck; rays drawn in outline; rays composed of interlacing lines. All have their points outwards.

In some cases a second band of zigzags is added on the body just below the rays.

Checkerboard. This is generally used as a band on the body. The plain squares are occasionally dotted.

Lozenges. As an ornament in field on the shoulder, combined with a ray or pot-hook.

Fig. 54. Height, 0.06 m. Neck and handle restored; on shoulder ray pattern.



FIG. 54.



FIG. 55.

This is an example of the simplest form of this second type, of which about twenty-five more were found. The majority had a ray pattern around the base, and the place of one of the broad bands taken by a checkerboard band. Pot-hooks were occasionally found on the shoulder instead of rays.

Fig. 55. Height, 0.062 m. Yellowish clay, burnt red on one side. Circle of dots on rim. Sign like the letter H on handle, vertical zigzags on rim. On body, frieze of three animals. Below, rays. Above and below animal frieze, two lines of dark red paint applied. The vase is intact.

This lekythos represents the most advanced stage of the second type, and can equally well be considered as the first stage of Class III., or the last of Class II. In fact, it forms a link between the two, since the animal figure is now introduced, through the Oriental influence. A dozen more of this type were found intact, and at least a basketful of fragments belonging to similar vases.

The application of the extra dark red lines now becomes quite a feature in the style, and few vases belonging to Class III. are without it. Several lekythoi of this shape, without any animal decoration, showed this same feature. One was adorned with two broad bands of brown, on which six alternating thin stripes of purple and yellow had been applied. A similar instance is at Syracuse (Case VII. No. 2893).

Also several lekythoi were found with checkerboards on the body (with applied bands of dark red between), and a leaf rosette on the neck, similar to those in the Louvre, v. Pottier, *Vases de Louvre*, pl. xxxix. E, 309; cf. also *Mon. Ant.* I. p. 824 (from Megara Hyblaea). Several examples are in Rome (Museo Papa-Giulio) and Florence. The type seems to be very common.

Oinochoai.

Three distinct types of oinochoai are to be noted.

1. Short neck, body slightly curved.
2. Long neck, cone-shaped body.
3. Short neck, square shoulder.

Each type is subject to occasional variations.

Type 1.

Fig. 56. Height, 0.124 m.; diameter at base, 0.115 m. Missing portions restored in plaster. Reddish clay, with dark brown decoration. Three bands of vertical zigzags on shoulder.



FIG. 56.

This was the only example of the type which was preserved entire. As few other fragments of similar vases were found, the form does not appear very common at the Heraeum.

1 a and **b** (PLATE LIX.). Two fragments from a large oinochoe, whose height cannot be determined. Reddish clay, with dark brown decoration. On the neck, an elaborate flower pattern between vertical "Running Dogs." On shoulder, alternating rays of interlaced lines whose tops end in two hooks with a border of fine vertical lines; below, dotted lozenge chain. Several other fragments from the same vase were found.

The pattern on the neck is similar to that on an oinochoe in Athens (*Jahrb.* II. (1887), p. 52, fig. 14) as well as the Analytos jug (*Jahrb.* II. (1887), pl. iii.), and seems to be drawn from a Mycenaean prototype. I am unable to find any similar treatment of the ray pattern on the shoulder.

The form of this vase is a slight modification of **Fig. 56**, as the diameter of the body is not so large in proportion to the neck. Only one other vase of exactly this form was found with a decoration on the body of rays, bands, and checkerboard. The form, however, is quite common at Syracuse. Cf. *Not. d. Scav.* 1893, p. 468; 1895, p. 153, fig. 38. In the Corinthian period it becomes a favorite shape.

The few fragments of oinochoai of this form (**Fig. 56** and PLATE LIX. 1) did not show any great variety in their scheme of ornamentation. Zigzags, checkerboards, and rays (especially on the base) were the usual motives.

Type 2.

This type seems to be the most favorite form of oinochoe at the Heraeum, judging by the number of the vases. Thirty or so were preserved more or less complete, varying between 10 and 15 cm. in height. An equal number had the necks and handles broken away, but the bodies intact, while the number of fragments belonging to vases of this form filled several baskets. Something like a hundred necks were found, but in only a few instances did they fit any of the bodies. The total number of vases represented must have numbered several hundred.

Fig. 57. Height, 0.165 m.; diameter, 0.135 m. Handle restored. On neck, two bands, the upper containing a zigzag figure like an N, and the lower a lozenge chain. Both bands are broken by a figure resembling two triangles with contiguous points. On shoulder, Geometric snake with *swastikas*, dots, and zigzags as ornaments in field.

This vase is still somewhat allied to the preceding type, save for the lengthening of the neck, and seems identical in form with an oinochoe from Eleusis (Ἐφημ. Ἀρχ. 1898, p. 106, fig. 26).

Fig. 58. Height, 0.17 m.; diameter, 0.12 m. Rim and handle restored. On neck, four bands of lozenge chains, separated by a broad band of horizontal zigzags. On shoulder, rays (interlaced lines), with *swastikas* as ornaments in field. Below, checkered band: on base, rays. Decoration in bright red and black.

This is the best specimen of the type that was found. The form is seen here in its complete development, the body cone-shaped, and the neck very long (about once and a half times the height of the body).



FIG. 57.



FIG. 58.

The technique of all these vases and fragments is very similar, the clay reddish or greenish in tone, with a yellow slip, and the decoration (often very lustrous) in black or brown, changing to red, in many cases intentionally so. As no two vases have exactly the same ornamentation, it will be well to consider that more in detail.

As in almost every case, the main body of the vase is ornamented with fine parallel bands; the variation occurs in the following places: neck, handle, shoulder, base, and bottom of the vase.

Neck and rim. The rim as a rule is never ornamented, but is entirely covered on the outside with a dark glaze. A few fragments were found which showed that the ornamentation (lozenge chain) had been carried on to the rim itself. The neck, however, offers the greatest variety of ornamentation. From over a hundred necks, forty-five distinct systems of designs were counted, which fall into several classes. The design never completely encircles the vase, but leaves a vacant space from rim to shoulder, just back of the handle.

In a few cases the neck is covered with parallel horizontal lines the whole length. This, however, is not common, and was observed on only a few fragments. The usual type is a series of broad friezes containing the various motives, separated by the parallel line system. These figures are either arranged in series of equal width, or else broad and narrow friezes together. The ornaments in them are always zigzags (vertical or horizontal), lozenge chains, meanders, rays, or water birds. A few examples showed a water bird in a panel.

The following represent the most striking examples (PLATE LIX.): —

2. Length, 0.107 m. Reddish yellow clay, with yellow slip. Brilliant red decoration. Meander frieze bounded above and below by friezes of lozenge chain (interlaced lines). Below, part of a frieze of N ornament similar to fig. 57.

3. Length, 0.054 m.; width, 0.045 m. Brick red clay, with yellow slip. Brilliant decoration in light and dark red. Guilloche.

Reckoning the diameter of the neck as one fourth of the length, we obtain an oinochoe of about 25 cm. in length (the neck being about once and a half times the height of the body). Several fragments of necks of an even larger size were found, which, together with the size of some of the fragments from the bodies, shows that oinochoai of a very large size (25 to 35 cm. in height) existed at the Heraeum. Oinochoai of such a large size are rather rare; the largest existing specimen with which I am familiar was formerly at Callaly Castle,[1] in Northumberland (Forman collection), and measures 22½ cm. in height, and 21 cm. in width at the base.

[1] What has become of this vase I am not able to say. No mention of it occurs in the Catalogue of the Forman Sale.

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Fig. 56.

This was the only example of the type which was preserved entire. As few other fragments of similar vases were found, the form does not appear very common at the Heraeum.

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The pattern on the neck is similar to that on an oinochoe in Athens (*Jahrb.* II. (1887), p. 52, fig. 14) as well as the Analytos jug (*Jahrb.* II. (1887), pl. iii.), and seems to be drawn from a Mycenaean prototype. I am unable to find any similar treatment of the ray pattern on the shoulder.

The form of this vase is a slight modification of **Fig. 56**, as the diameter of the body is not so large in proportion to the neck. Only one other vase of exactly this form was found with a decoration on the body of rays, bands, and checkerboard. The form, however, is quite common at Syracuse. Cf. *Not. d. Scav.* 1893, p. 468; 1895, p. 153, fig. 38. In the Corinthian period it becomes a favorite shape.

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Fig. 57.



Fig. 58.

This is the best specimen of the type that was found. The form is seen here in its complete development, the body cone-shaped, and the neck very long (about once and a half times the height of the body).

The technique of all these vases and fragments is very similar, the clay reddish or greenish in tone, with a yellow slip, and the decoration (often very lustrous) in black or brown, changing to red, in many cases intentionally so. As no two vases have exactly the same ornamentation, it will be well to consider that more in detail.

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In a few cases the neck is covered with parallel horizontal lines the whole length. This, however, is not common, and was observed on only a few fragments. The usual type is a series of broad friezes containing the various motives, separated by the parallel line system. These figures are either arranged in series of equal width, or else broad and narrow friezes together. The ornaments in them are always zigzags (vertical or horizontal), lozenge chains, meanders, rays, or water birds. A few examples showed a water bird in a panel.

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3. Length, 0.054 m.; width, 0.045 m. Brick red clay, with yellow slip. Brilliant decoration in light and dark red. Guilloche.

Reckoning the diameter of the neck as one fourth of the length, we obtain an oinochoe of about 25 cm. in length (the neck being about once and a half times the height of the body). Several fragments of necks of an even larger size were found, which, together with the size of some of the fragments from the bodies, shows that oinochoai of a very large size (25 to 35 cm. in height) existed at the Heraeum. Oinochoai of such a large size are rather rare: the largest existing specimen with which I am familiar was formerly at Callaly Castle,[1] in Northumberland (Forman collection), and measures 22½ cm. in height, and 21 cm. in width at the base.

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Shoulder. Less variety was exhibited in the decoration of the shoulder. The usual motives are, rays (in silhouette, or formed by interlaced lines), radiating outwards from the neck. A few fragments showed rays pointing inwards; zigzags, vertical and horizontal, singly or in series; checkerboard. The shoulder has occasionally a double frieze, as in **Figs. 57** and **58**.

Fig. 59. Fragment of oinochoe. Height, 0.057 m. Brick red clay, with bright red decoration. On shoulder, frieze of birds (lozenges and pot-hooks as ornaments in field), and a narrow border of vertical zigzags. Usual arrangement of bands on body. Incised lines freely used.

This fragment represents the latest stage of the oinochoai belonging to Class II., and corresponds to the lekythos on p. 159, fig. 55. As in the Geometric style, birds seem to be the earliest animate motives used.



Fig. 59.

Handle. Out of over fifty handles, twenty-three distinct designs were counted. The decoration is almost invariably on the outside of the handle, the inside being left plain. One fragment showed glaze on the inside. The usual types are, —

Horizontal lines,
Vertical lines,
Both combined,
Zigzags, vertical or horizontal,
Herring-bone,
Meander,
Geometric snake,
Guilloche,
Rosettes.

The following are the most striking examples: —

PLATE LIX.

4. Length, 0.087 m. Yellow clay, dark brown decoration, rather thin. A similar meander exists on the handle of an oinochoe at Syracuse, tomb 344. Cf. *Not. d. Scavi*, 1895, p. 152, fig. 38.

5. Length, 0.095 m. Light red clay, with yellow slip. Dark red glaze on inside. Guilloche alternately in outline and silhouette. The same peculiarity may be found on a Mycenaean fragment (*Myk. Vas.* XXXIV. 339). Another instance occurs on the rim of an amphora found at Cynosarges by the British School at Athens (*J. H. S.* XXII. [1902], pl. ii.).

6. Length, 0.069 m. Light yellow clay. Snake and rosettes in black (cf. *J. H. S.* XI. [1890], p. 175; *Jahrb.* I. [1886], p. 135), very much faded. Incised lines are here used.

7. Length, 0.135 m. Reddish clay. Decoration originally red, but burnt quite black. The arrangement of a half rosette at the base of the handle is extremely curious.

Base. The decoration on the base is usually confined to a ray pattern. Little variety is introduced, except in the height of the rays which on the larger fragments measure as much as three centimetres. A frieze is occasionally added above the rays of zigzags or some other design. One fragment showed a Mycenaean spiral chain. In some cases the line system is continued clear to the base, or a frieze of zigzags may be introduced in place of the rays.

Bottom. The decoration of the flat surface on the bottom with a design is a curious feature among Argive vases of this type, and may be also seen on an oinochoe from Aegina (*Athen. Mitt.* XXII. [1897], p. 294, fig. 19). The Aegina oinochoe follows the usual scheme, which is a series of parallel lines crossing each other at right angles. The other scheme is simply a series of parallel lines across the diameter of the base. Other fragments showed the fore feet of a horse, scroll and lozenge patterns. On the

bottom of one fragment of the base, the upper part of a human face, similar in character to the face on PLATE LVI. 7, appeared. A similar face occurs on a Ionic hydria in the Louvre (Pottier, *Vas. Ant. de Louvre*, pl. lii, E 696).

To this type of oinochoe belong a number of vases, which through their decoration seem to form a class by themselves. About a dozen were found more or less intact, and perhaps fifty more represented by fragments. These vases were not more than 10 cm. in height, and are entirely covered with a black glaze, except on the base, where a natural band of the clay is left on which is a ray pattern. Around the body of these vases run thin lines of red or yellow, applied after firing, and on the shoulder an incised tongue pattern, the divisions of which are alternately red and yellow.

The clay of all these vases is of a light yellowish tone, and the glaze varies between black and brown. The only variety lies in the arrangement of the applied red and yellow lines, which are arranged in many different ways. The three fragments on colored PLATE LXIV. 6 to 8, illustrate clearly the characteristics of this type.

8. (PLATE LIX.) Neck of oinochoe. Length, 0.115 m. Light reddish clay, entirely covered with a lustrous black glaze, on which are added three rosettes in yellow.

No other fragments of this vase were found, but it seems certain that it belonged to a large oinochoe, entirely glazed, with the usual 'tongue' pattern on the shoulder. The presence of an ornament on the neck of oinochoai of this type seems unique; I know of no similar instance.

In Greece itself vases of this type do not seem common. A few similar fragments were found at Aegina (*Athen. Mitt.* XXII. [1897], p. 126). Outside of Greece, especially in Italy, the type appears frequently (cf. *Not. d. Scav.* 1895, p. 139, fig. 18). Similar examples may be found in the British Museum and the Louvre.

As a rule the vases were small; but one exception (No. 8) occurs.

Type 3.

This type differs principally from the preceding, in that the shoulder is set more squarely to the body, the line between being furnished, in some cases, with a slight moulding. The shape is not common; one may be found at Syracuse (from Megara Hyblaea, tomb 898), and another in Naples (Heydemann, *Cat.* pl. iii. 130). Few vases of this type were found at the Heraeum; not more than five intact or partly so, and as many more in fragments. The scheme of decoration did not differ materially from what we have already discussed; two of the vases were entirely covered with a dark brown glaze on which were applied lines of dark red and white. Others again showed a shoulder pattern of rays or leaves, and on one fragment the body was ornamented with a "Running Dog" pattern.



Fig. 60.

Fig. 60. Height, 0.086 m. Rim and handle restored (rim falsely so, as it should have had a trefoil opening). Light red clay, with red decoration. Leaf pattern on shoulder and body, and applied dark red bands on neck, shoulder, and body. The oinochoe in Naples, mentioned above, has similar ornamentation.

Miscellaneous Types.

Under this head may be mentioned a few oinochoai which show some slight variations from the types already discussed. One small jug of greenish clay was found, 5 cm. in height, which though in shape similar to lekythoi of Type 1, had a trefoil lip; except

Shoulder. Less variety was exhibited in the decoration of the shoulder. The usual motives are, rays (in silhouette, or formed by interlaced lines), radiating outwards from the neck. A few fragments showed rays pointing inwards; zigzags, vertical and horizontal, singly or in series; checkerboard. The shoulder has occasionally a double frieze, as in **Figs. 57** and **58**.

Fig. 59. Fragment of oinochoe. Height, 0.057 m. Brick red clay, with bright red decoration. On shoulder, frieze of birds (lozenges and pot-hooks as ornaments in field), and a narrow border of vertical zigzags. Usual arrangement of bands on body. Incised lines freely used.

This fragment represents the latest stage of the oinochoai belonging to Class II., and corresponds to the lekythos on p. 159, fig. 55. As in the Geometric style, birds seem to be the earliest animate motives used.



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As a rule the vases were small; but one exception (No. 8) occurs.

Type 3.

This type differs principally from the preceding, in that the shoulder is set more squarely to the body, the line between being furnished, in some cases, with a slight moulding. The shape is not common; one may be found at Syracuse (from Megara Hyblaea, tomb 898), and another in Naples (Heydemann, *Cat.* pl. iii. 130). Few vases of this type were found at the Heraeum; not more than five intact or partly so, and as many more in fragments. The scheme of decoration did not differ materially from what we have already discussed; two of the vases were entirely covered with a dark brown glaze on which were applied lines of dark red and white. Others again showed a shoulder pattern of rays or leaves, and on one fragment the body was ornamented with a "Running Dog" pattern.



FIG. 60.

Fig. 60. Height, 0.086 m. Rim and handle restored (rim falsely so, as it should have had a trefoil opening). Light red clay, with red decoration. Leaf pattern on shoulder and body, and applied dark red bands on neck, shoulder, and body. The oinochoe in Naples, mentioned above, has similar ornamentation.

Miscellaneous Types.

Under this head may be mentioned a few oinochoai which show some slight variations from the types already discussed. One small jug of greenish clay was found, 5 cm. in height, which though in shape similar to lekythoi of Type 1, had a trefoil lip; except

for two bands on the body, the jug bore no decoration. The body of another was also found which belonged to Type 2 of the oinochoai, but which had a moulding around the bottom, so that the base was slightly raised. On the bottom was a wheel with four spokes, having a square of interlaced lines between each spoke. Another, which belongs to the same type, is given below.



Fig. 61.

Fig. 61. Height, 0.055 m.; diameter, 0.062 m. Rim and handle missing. Reddish clay, with brown decoration. This vase is more squat and rounded than those included in Type 2, and is paralleled by a Geometric jug from Eleusis, Ἐφημ. Ἀρχ. 1898, pl. ii. 10.

Further we may mention several small jugs, with a globular shaped body, neck and handles missing. One in particular (height, 0.65 m.) had a Geometric snake on the body, and similar shoulder decoration to a jug from Eleusis (*ibid.* 1898, p. 102, pl. ii. 5).

Skyphoi.

The bulk of all the Argive fragments found at the Heraeum belonged to skyphoi, which were presumably the favorite shape. As these skyphoi are usually small and made of fine clay, they are generally broken, and few were preserved intact. The variations, however, are few, and the general scheme of decoration is the same in all.

Three distinct forms can be noted.

1. Skyphoi with vertical handles.
2. Skyphoi with horizontal handles.
3. With similar handles to Type 2, but more closely allied to the kylix form.

The interior in every case is covered with a dark glaze.

Type 1.

Fig. 62. Height, 0.069 m.; diameter, 0.08 m. Handle and part of rim restored. Dark clay,



Fig. 62.



Fig. 63.

with decoration in black and brown. Arrangement of vertical and horizontal lines on rim, stripes on handle.

The majority of the fragments of 1 belong to similar vases. A similar one is in the British Museum, A 543. Cf. also Zannoni, *Scavi*, XXXVIII. 6.

Fig. 63. Height, 0.077 m.; diameter, 0.07 m. Reddish clay, vertical lines on rim inclosing three series of zigzags in a panel; stripes on handles.

Here the separation of the rim and body is more sharply defined than usual. Both **Figs. 62** and **63** are from the Old Temple Terrace.

Skyphoi of Type 1 were not very common at the Heraeum, nor, in fact, is it one of the usual shapes. It is evidently derived from a Mycenaean shape (cf. *Myk. Thong.* x. 49), as there we see the same sharp definition of rim and body. As a rule the

skyphoi of both types had a flat base, but some showed a well-defined foot (as in **Fig. 66**); the presence of the foot seems peculiar to each type.

Type 2.

Type 2 is the usual form of skyphos found not only at the Heraeum, but all over Greece, Sicily, and Italy. The form is that in Berlin *Cat.* pl. v. 98. Some thirty or so from the Heraeum (mostly very small) were preserved intact, while the number of fragments filled several baskets. They vary largely in size, some being as high as 20 to 30 cm., and some measuring less than 5 cm. in height. The only variation in the form lies in the fact that some are much taller in proportion to their diameter than others. The scheme of decoration falls into two classes.

a. Exterior ornamented with the usual linear motives.

b. Entire vase covered by a dark glaze except for a band around the rim on which the various linear motives are placed. In some cases only the lower half of the skyphos is glazed.

a.

A large number of fragments belonging to skyphoi exactly similar to those published by Pallat, *Athen. Mitt.* XXII. (1897), p. 276, fig. 8, were found. The prevailing style of decoration seemed to be rays on the base, bands around the centre, and vertical lines and zigzags on the rim. Rays are almost invariably used on the base, and in only a few cases are the bands continued down to the base. The chief variations occur on the rim; we have rays, zigzags, water birds (Pallat, *loc. cit.* p. 278, figs. 10 and 11), or a meander pattern. All these motives are generally included in a panel bounded by vertical lines. In some cases a smaller panel with a double triangle (as in Pallat, p. 279, fig. 12) is added at each side of the main panel. The space covered by the handles is usually left undecorated. Several fragments also showed that in lieu of handles the vase had a small boss on each side.

The greatest variations occur in the technique. The clay runs through all shades of red, with a slip that is generally red but in some cases a vivid yellow. The most interesting technical feature is the contrast obtained by subjecting a part of the vase to a stronger fire, in such a way that half of the vase is black and the other half red. As the line of separation is very strongly marked in many fragments, we can only suppose that the result was obtained by covering over with moist clay that part of the vase on which the decoration was to remain black, leaving the other part exposed to the full action of the fire. The interior, of course, was treated in similar fashion, as the glaze shows the same contrasts of red and black.

This same peculiarity may be seen on Mycenaean vases, but on them the contrast obtained is not quite so decided or regular. Outside of the Heraeum this peculiarity occurs but seldom. A pyxis cover from Aegina (Pallat, *loc. cit.* p. 306, fig. 24) shows this same technique, and similar instances occur on a few fragments from the Acropolis and on a skyphos at Syracuse, Case VIII. No. 2132, the upper part of which is grayish green, and the lower yellowish red, the line of separation being strongly marked. It is not clear from Orsi's words (*Not. d. Scav.* 1891, p. 415, "due skyphoi neri" etc.), whether similar fragments have been found there. On the whole, as this technique is met with but seldom outside of the Argolid, it is possible that we may detect here a distinct Argive peculiarity.

The following fragments best illustrate the technique; the clay is practically the same in all, — reddish, with a yellowish or greenish slip.

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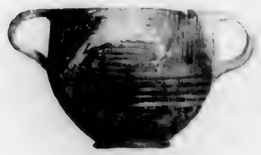


Fig. 62.

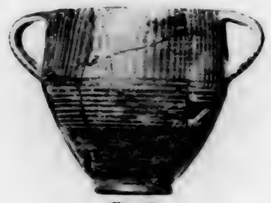


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PLATE LXIV.

2. Rays and triangle in dark brown. Bands in red.

3. Zigzags and upper series of bands in black; deep red glaze on lower part.

4. Geometric snake, zigzags, and vertical bands in black; upper bands of rim and below the main frieze in red.

The introduction of the snake on these skyphoi is rather rare; no other similar instance was found at the Heraeum.

Quite a number of fragments, mostly of skyphoi, of which PLATE LXIV. No. 5, is an example, showed a peculiarity which is probably accidental. These were all of reddish clay, with a bright yellow slip, but with their glaze and decoration worn off in streaks. The decoration had assumed a brilliant pink color. Whether this is the result of the nature of the soil in which these fragments lay, or some peculiarity in the glaze, I cannot say. A skyphos of precisely the same appearance is at Syracuse (*Not. d. Scav.* 1895, p. 183).

Lastly a small number of fragments, which probably came from the burnt layer of the Old Temple, though the places where they were found are not specified in any note of the excavation. These fragments had been burnt almost black, and in such a way that their decoration, which was originally black, now appears dark red. This is clearly the result of some action of fire after the vase was completed, and was not intentional.

Besides the motives mentioned above, a few more may be mentioned which were only found on scattered fragments.

PLATE LIX.

9. Lozenge chain, of interlaced lines. Two distinct rows of lozenges are used combined together. The upper part of this fragment is black; the lower, red.

10. Here a second narrow frieze with a lozenge chain is introduced below the meander border. Similar technique to **9**.

11. The panel is here separated from the rim by the Linear system, and contains a fish and part of a second. Incised lines are used. This is the only example of a fish among the Argive fragments from the Heraeum.

b.

Fig. 64. Height, 00.72 m.; diameter, 00.85 m. Reddish yellow clay, with dark red glaze. Border, vertical lines, and zigzags on rim, horizontal stripe on each handle.

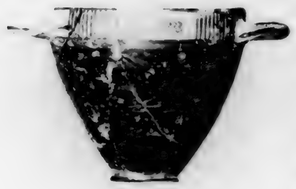


FIG. 64.

This type is too common to need any comment. Fragments of similar vases were found in large quantities at the Heraeum.

The combination of Classes **a** and **b** is shown by PLATE LXIV. No. 3. Many vases of Class **b**, especially the very small ones, have a broad band of dark red applied to the glaze beneath the rim, or a series of narrow purple bands.

Type 3.

Skyphoi belonging to Type 3 are not very numerous, only half a dozen being found intact, and very few represented by fragments. These are very low in proportion to their diameter, with large handles. The rim is sharply defined, and there is no indication of a foot. The decoration follows the usual Linear scheme.

This shape seems to be more usual in the Geometric style. Cf. Wide, *Jahrb.* XIV. (1899), p. 214, figs. 96–98, and p. 215, fig. 100.

Fig. 65. Height, 0.047 m.; diameter, 0.095 m. Reddish yellow clay, with black decoration changing to dark red. Border of zigzags and vertical lines.

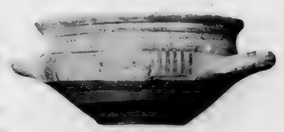


FIG. 65.

Several others were found with their exteriors completely glazed except for a narrow border along the rim as in Type 2, Class **b**. Similar skyphoi are at Syracuse (Case VII.) and at Naples (*Rac. Com.* left-hand case, No. 85184).

Miscellaneous.

12. From rim of skyphos, with a handle arranged as in the 'amphora a colonnette.' On shoulder, Geometric snake.

This skyphos does not seem to agree with any of the types already mentioned. Although no other similar fragment was found at the Heraeum, several may be found in Syracuse (*Not. d. Scav.* 1893, p. 477; 1895, p. 176). Such cases are clearly older than the Corinthian style and form a preliminary step to the 'amphora a colonnette.' Cf. *Jahrb.* I. (1886), p. 135, fig. 2941; Wilisch, *Altkorinthische Thonindustrie*, p. 27.

Fig. 66. Fragment of skyphos. Reddish clay, with black decoration. On the border of rim a lozenge of interlaced lines and two vertical lines separating a panel in which the rear part of a water bird is visible.

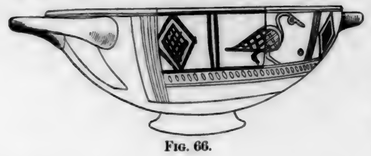


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This skyphos belongs to a series of vases of which several are already known.[1] Our fragment resembles the vase from Aegina so closely that it might be considered as belonging to the same vase. The general character of the fragment is much more in keeping with the Argive style than the Geometric, and hence I feel no hesitation in classing it with the former style. In spite of vases of this description having been found at Rhodes, there is certainly no reason for calling them Rhodian, since they have nothing in common with the style of that name.

PLATE LXV. 1 *a* and *b*. Five fragments of a large skyphos, height and diameter uncertain. Fine reddish yellow clay, with brilliant yellow slip, slightly greenish in places, with decoration varying between dark brown and red. Brownish yellow paint has been applied in some places after the first firing. No glaze on the interior. From the large size of the vase, together with the absence of glaze on the interior, the form would seem to be a deinos rather than a skyphos.

An elaborate system of palmettes is here seen, separated from a ray pattern below by the usual Linear system. The central leaves of each alternate palmette are in brownish yellow. The centres of each palmette are formed by three lines, the intervening spaces being cut out, and no slip being left; and the same is true of the spaces which divide the central petals.

A fragment, almost exactly similar, was found at Aegina (Pallat, *loc. cit.* p. 279, fig. 12, p. 280, fig. 12 *a*), for whose restoration our fragment formed the basis. From the presence of a meander border above the palmettes on the Aegina fragment, it may be

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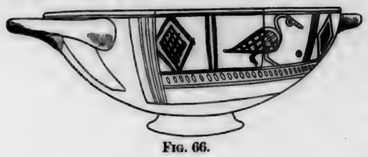


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inferred that the same motive figured on our vase. The restoration of our fragment differs materially from that of the Aegina fragment, in that the lower portions of each palmette are closed by the line border. It must, however, be said that the restoration of the tops of each palmette is conjectural, at least in the case of the four-leaved palmettes. Symmetry demands that the central lobe of the three-leaved palmettes should be the same at the top as at the bottom, and for the same reason the two central lobes of the four-leaved palmette should correspond at the top to the broad base.

In spite of the advanced character of the palmettes, the presence of the meander border on the Aegina fragment is sufficient to warrant this vase being assigned to Class II.

Sugar-Bowl Form.

The form is akin to *Berl. Cat.* pl. v. 104, and Wilisch, *op. cit.* pl. i. 11.

Fig. 67. Height, 0.066 m. Greenish clay, with black decoration. Six purple stripes added on body and shoulder; rays on base, vertical zigzag borders on body. Intact.



Fig. 67.

This was the only example, whole or in fragments, among the Argive vases, of the sugar-bowl vase, which is such a characteristic shape of the Corinthian style. The cover was not found, or could not be identified.

Pyxides.

The fragments of pyxides and their covers filled something over two baskets. Few of these could be restored entire. The number of covers found was far in excess of the vases represented by the fragments, — in fact, three or four times as many covers were found. No explanation for this fact is forthcoming, unless the covers were intended for skyphoi and other vessels with a wide opening.

As very few of the covers could be identified as belonging to any particular vase, and as the variations in their form are somewhat marked, they will be discussed separately.

Two types of pyxides may be noted.

1. Those whose covers rest directly on the rim (Wilisch, *op. cit.* pl. i. 3).
2. Those whose body is entirely hidden by the cover, like a modern cheese-jar (Wilisch, pl. i. 4).

Type 1 falls into two divisions.

- **a.** Pyxides with curved or sloping sides (*Berl. Cat.* pl. v. 103).
- **b.** Pyxides with straight sides (*Berl. Cat.* pl. v. 101).

Type 2 falls into two divisions.

- **a.** Sides sloping inward, without moulding.
- **b.** Moulding on base, into which the cover rim fits.

The pyxis seems to be a commoner type in Class II. than in Class III. of the Argive period. The decoration does not vary to any extent. As a rule the body is covered with parallel bands, leaving a border at the bottom for a ray pattern, and one, sometimes two, borders below the rim, which are filled with the usual Geometrical designs. The interior is invariably covered with a dark glaze, which is never found on the under side of the cover.

Type 1 a.

Few vases are represented by the fragments of this type. The only one preserved whole was 5 cm. in height and 9 in diameter, and was made of a coarse reddish-yellow clay, without any decoration. The other fragments show a ray pattern at the base and an incised tongue pattern as a rim border, with the alternate spaces colored very much yellow or red, faded.

Type 1 b.

To this type belong the bulk of the pyxis fragments. About a dozen vases were restored almost entire. As a rule the vases are rather small, varying from 4 to 5 cm. in height and 8 to 10 cm. in diameter. The decoration shows generally the following characteristics: —

Entire side covered with parallel bands.
Border on rim (generally zigzags in series).
Border on base (ray pattern, zigzag or "Running Dog").

Fig. 68 a and b. Pyxis and cover. Height, 0.182 m. Missing portions restored in plaster. Greenish yellow clay, with black glaze on interior almost obliterated. Black decoration faded in parts.



Fig. 68 a.

Pyxis. On rim border with Geometric snake. Vertical and horizontal zigzags as ornaments in field. Incised dots on snake's body. "Running Dog" pattern on handle. Below, a frieze of rays at top and bottom alternately (incised lines) and scroll pattern. On bottom of pyxis, four series of three concentric bands.

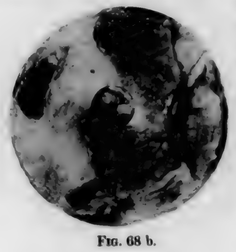


Fig. 68 b.

Cover. In centre five-pointed star. Border of cover precisely similar to upper border on the pyxis. On button four pot-hooks. A similar snake may be found on a Geometric amphora cover; v. *B. C. H.* XIX. (1895), p. 276, fig. 2.

A few fragments of another pyxis (9 cm. in height) of precisely similar clay and decoration were found. The glaze, however, was in better condition, and the concentric bands on the bottom more finely drawn and more numerous.

Fig. 69 a-f. Pyxis and cover, found on Old Temple Terrace. Height, 0.13 m.; diameter, 0.28 m. Missing portions restored in plaster. Light red clay, with black decoration burnt red in parts. Glaze on interior varying from black to deep red.

Pyxis. On edge of rim short parallel stripes. On rim border of three meanders in separate panels, with an eight-pointed star separating them from the handles. Single meander on the handles. Separated from the upper border by a checkerboard and band of "Running Dogs" is the main frieze, with an elaborate floral pattern, the vacant spaces being filled by lozenges in series of fours and flower scrolls. On base rays. On bottom (**Fig. 69 b**) lotos pattern with incised lines.

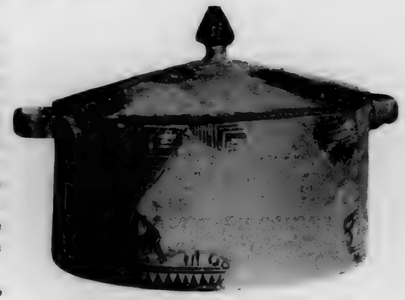


Fig. 69 a.

Cover. Clay slightly redder in tone, with ornamentation similar to that on the

inferred that the same motive figured on our vase. The restoration of our fragment differs materially from that of the Aegina fragment, in that the lower portions of each palmette are closed by the line border. It must, however, be said that the restoration of the tops of each palmette is conjectural, at least in the case of the four-leaved palmettes. Symmetry demands that the central lobe of the three-leaved palmettes should be the same at the top as at the bottom, and for the same reason the two central lobes of the four-leaved palmette should correspond at the top to the broad base.

In spite of the advanced character of the palmettes, the presence of the meander border on the Aegina fragment is sufficient to warrant this vase being assigned to Class II.

Sugar-Bowl Form.

The form is akin to *Berl. Cat.* pl. v. 104, and Wilisch, *op. cit.* pl. i. 11.

Fig. 67. Height, 0.066 m. Greenish clay, with black decoration. Six purple stripes added on body and shoulder; rays on base, vertical zigzag borders on body. Intact.



FIG. 67.

This was the only example, whole or in fragments, among the Argive vases, of the sugar-bowl vase, which is such a characteristic shape of the Corinthian style. The cover was not found, or could not be identified.

Pyxides.

The fragments of pyxides and their covers filled something over two baskets. Few of these could be restored entire. The number of covers found was far in excess of the vases represented by the fragments, — in fact, three or four times as many covers were found. No explanation for this fact is forthcoming, unless the covers were intended for skyphoi and other vessels with a wide opening.

As very few of the covers could be identified as belonging to any particular vase, and as the variations in their form are somewhat marked, they will be discussed separately.

Two types of pyxides may be noted.

1. Those whose covers rest directly on the rim (Wilisch, *op. cit.* pl. i. 3).
2. Those whose body is entirely hidden by the cover, like a modern cheese-jar (Wilisch, pl. i. 4).

Type 1 falls into two divisions.

a. Pyxides with curved or sloping sides (*Berl. Cat.* pl. v. 103).
b. Pyxides with straight sides (*Berl. Cat.* pl. v. 101).

Type 2 falls into two divisions.

a. Sides sloping inward, without moulding.
b. Moulding on base, into which the cover rim fits.

The pyxis seems to be a commoner type in Class II. than in Class III. of the Argive period. The decoration does not vary to any extent. As a rule the body is covered with parallel bands, leaving a border at the bottom for a ray pattern, and one, sometimes two, borders below the rim, which are filled with the usual Geometrical designs. The interior is invariably covered with a dark glaze, which is never found on the under side of the cover.

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Few vases are represented by the fragments of this type. The only one preserved whole was 5 cm. in height and 9 in diameter, and was made of a coarse reddish-yellow clay, without any decoration. The other fragments show a ray pattern at the base and an incised tongue pattern as a rim border, with the alternate spaces colored very much yellow or red, faded.

Type 1 b.

To this type belong the bulk of the pyxis fragments. About a dozen vases were restored almost entire. As a rule the vases are rather small, varying from 4 to 5 cm. in height and 8 to 10 cm. in diameter. The decoration shows generally the following characteristics: —

Entire side covered with parallel bands.
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Fig. 68 a and **b**. Pyxis and cover. Height, 0.182 m. Missing portions restored in plaster. Greenish yellow clay, with black glaze on interior almost obliterated. Black decoration faded in parts.



FIG. 68 a.

Pyxis. On rim border with Geometric snake. Vertical and horizontal zigzags as ornaments in field. Incised dots on snake's body. "Running Dog" pattern on handle. Below, a frieze of rays at top and bottom alternately (incised lines) and scroll pattern. On bottom of pyxis, four series of three concentric bands.

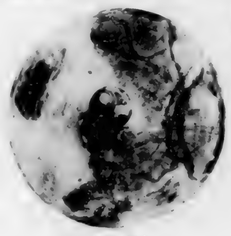


FIG. 68 b.

Cover. In centre five-pointed star. Border of cover precisely similar to upper border on the pyxis. On button four pot-hooks. A similar snake may be found on a Geometric amphora cover: v. *B. C. H.* XIX. (1895), p. 276, fig. 2.

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Pyxis. On edge of rim short parallel stripes. On rim border of three meanders in separate panels, with an eight-pointed star separating them from the handles. Single meander on the handles. Separated from the upper border by a checkerboard and band of "Running Dogs" is the main frieze, with an elaborate floral pattern, the vacant spaces being filled by lozenges in series of fours and flower scrolls. On base rays. On bottom (**Fig. 69 b**) lotos pattern with incised lines.

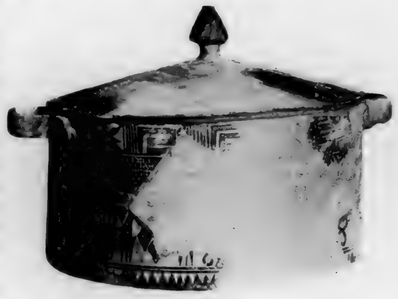


FIG. 69 a.

Cover. Clay slightly redder in tone, with ornamentation similar to that on the

bottom of the pyxis, and a ray border. The slip is burnt bright red as far as the ray border and then changes to a light gray. The button is restored, but the shape is probably correct.

This pyxis would seem to fall in the latter period of the Linear Argive class, at a time when the eastern influence was beginning to make itself felt, since the elaborate flower and lotos motives on the body and cover are certainly derived from some foreign source. At the same time the presence of the purely Geometrical motives is sufficient warrant for including the pyxis in Class II.



Fig. 69 b.

The restoration of the design is simple in the case of the body, but difficult for the cover and bottom. A peculiarity may be noted that on the reverse of the body (not shown in the cut) three flower scrolls are placed together in the vacant spaces between the roots of the large flowers, with no lozenge pattern in the alternate spaces. Moreover, a close examination shows that all the scrolls are not precisely alike, some ending in a bud. Details of three of the scrolls are shown in the cut. The ornamentation on both cover and bottom seems to have followed a similar scheme, and though it cannot be restored with absolute certainty, it is probably treated in similar fashion to the flower scrolls on the side. A skyphos in the British Museum (*Athen. Mitt.* XXII. [1897], p. 286, pl. vii. 3) shows precisely the same form of lotos or palmette under the handle. With that exception, I have failed to find a similar instance, nor do I know of any case where the bottom of a pyxis contains such an elaborate ornamentation as here.

The change in color on the cover finds its parallel in a cover from Aegina (v. Pallat, *loc. cit.* p. 300, fig. 24).

Type 2 a.

Fragments of this type were extremely scarce, and generally belong to the bases of these vases. Such fragments had pure linear decoration.[1] The following fragments alone are worth noticing.

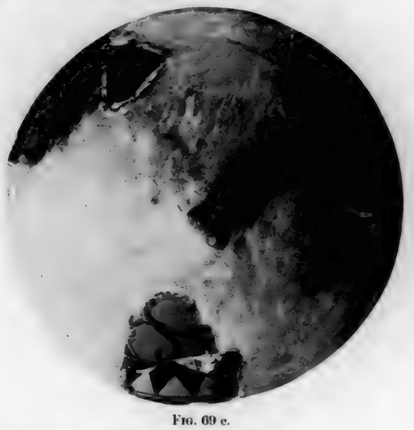
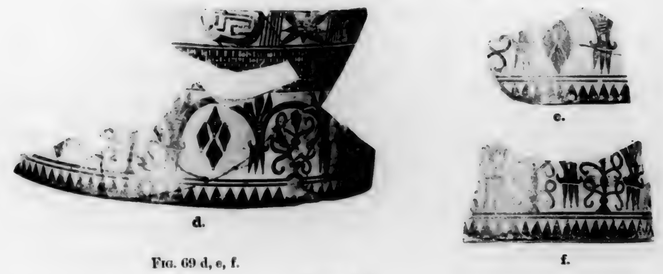


Fig. 69 c.

13 a and **b**. (Plate LIX.) Two fragments of pyxis, **a** base, **b** cover. Greenish clay, black decoration, with black glaze on interior of pyxis and cover as well. Around base band of vertical zigzags; above oblique parallel lines. Decoration on cover precisely the same. Two other fragments of the same vase were found.

[1] Several fragments clearly belonged to pyxides similar to *Ann. dell' Inst.* 1877, tav. d'agg. C D 9.



d. e. f.

Fig. 69 d, e, f.

Type 2 b.

Fragments of this type were quite numerous, but all, with a few exceptions, belong to covers. **Fig. 70** shows the profile of one of the bases of the pyxis. The decoration on both pyxis and cover was always the same, and is usually more elaborate than on the covers of Type 1.

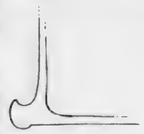


Fig. 70.

14 a and **b**. Two fragments of a cover. Height, 0.046 m.; diameter, 0.112 m.[1] Dark yellow clay, with brown black decoration. Ribbed moulding on corner and plain moulding on base. Vertical zigzags, bounding a panel in which the rear part of an animal (bull, probably) is seen. Leaf rosette on top of cover.

15. Fragment of cover. Height, 0.031 m.; diameter, 0.088 m. Reddish clay, with red decoration. Simple moulding on corner and base.

16. Top of cover. Diameter, 0.152 m. Yellow clay, with red decoration. Four borders of zigzags, tongue pattern, checkerboard and tongue pattern. Dark red color is applied to the tongues in series of threes and twos.

Other fragments showed the usual Linear motives, one having a frieze of water birds.

Covers.



Fig. 71.

The covers which belong to pyxides of Type 1 were so numerous as to demand a separate discussion. A large number were recovered almost intact (the knob being generally broken away) and the fragments filled about a basket. Some four or five hundred covers were represented, a number far exceeding the pyxides found.



Fig. 72.

Two types are represented.

1. Without flanges. These fall into two divisions.

a. Those which sink down in the centre and whose edges fit directly on the rim of the pyxis.

b. Those whose edges turn down sharply at the end and fit over the rim of the pyxis (**Fig. 72**).

2. With flanges. These are provided with a small flange just under the edge, which fits inside the rim of the pyxis, like the cover of a lady's powder box. The variations lie principally in the angle formed by the upper part of the cover and the varying distance between the flange and the edge of the cover. (**Fig. 73**.)

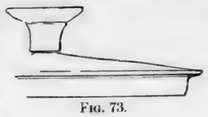


Fig. 73.

As all the covers follow a stereotyped system of linear ornamentation, none have been included in our plates. Such as are noteworthy are shown in outline.

[1] The dimensions of **14–16** are the original diameter of the covers.

bottom of the pyxis, and a ray border. The slip is burnt bright red as far as the ray border and then changes to a light gray. The button is restored, but the shape is probably correct.

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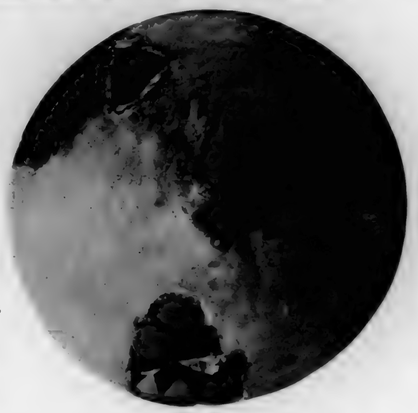


Fig. 69 c.

13 a and **b**. (Plate LIX.) Two fragments of pyxis, **a** base, **b** cover. Greenish clay, black decoration, with black glaze on interior of pyxis and cover as well. Around base band of vertical zigzags; above oblique parallel lines. Decoration on cover precisely the same. Two other fragments of the same vase were found.

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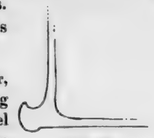


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Fig. 73.

As all the covers follow a stereotyped system of linear ornamentation, none have been included in our plates. Such as are noteworthy are shown in outline.

[1] The dimensions of **14–16** are the original diameter of the covers.

Type 1 a.

Only one specimen of this type was found (**Fig. 71**), 10 cm. in diameter. The entire surface of the exterior was covered with a black glaze, with a broad band of the natural clay near the rim.

Type 1 b.

No covers of this type were found intact. The decoration consists invariably of broad or fine parallel lines, in black and red. On many the two are seen together with a sharp line of demarcation. The clay is much thinner than in covers of Type 2, which may account for all being in a fragmentary condition.



Fig. 74.

Fig. 74 illustrates a type of cover which is equally connected with both Types 1 and 2.

Type 2.

The covers belonging to Type 2 were by far the most numerous. Though exhibiting considerable variation in their decoration, the general scheme seems fairly distinct.

Entire surface glazed.
Entire surface covered with parallel lines.
Both combined; i. e. the centre is glazed and the bands are confined to the outer part.
Rays in centre (usually six or eight pointed star) surrounded by bands. Covers showing the finest technique belong to this type.
Checkerboard on rim.
Zigzags in series on rim.
Tongue pattern on rim. Incised lines used to mark each tongue, with the application of purple, yellow, or white on alternate divisions.

Knobs.

Nearly a basketful of the knobs which form the top of the covers was found, and these also show a surprising amount of variation. As few of the covers were found with



Fig. 75.

their knobs, a separate treatment is again demanded. These knobs do not seem to be governed in any way by the cover types, but fall into peculiar types of their own.

Three types are represented (**Fig. 75**).

1. Truncated cone. Double division.
a. Simple truncated cone (1); top is occasionally rounded.
b. With a flange at the top. This may be either an inverted truncated cone (2) or a section of a cylinder (3).
2. Ball shaped. Double division.
a. Plain (4).
b. Small nipple or projection in the centre (5).
3. Flat. Double division.
a. Inverted cone; often with a slight sinking in the centre of the flat top (6).
b. Section of a cylinder (7).

The decoration is generally the following: —

Glazed.
Vertical parallel bands.
Rays.
Zigzags.
Checkerboard.
Leaf rosette.
Tongue pattern.

As the available space for decoration is small, these motives are not combined, except in one case where a leaf rosette was bordered by a checkerboard pattern.

Plates.

Fragments of plates were quite numerous at the Heraeum, about two basketsful being found. While many belong to the Geometric style, the majority of them belong to the second class of the Argive style. No fragments belonging to the first class were found, and only a few which belonged to the third.

Two types can be distinguished.

1. Flat base, without foot.
2. With foot.

Of Type 2, three variations appeared.

a. Form similar to 1 save that a small flange runs around the edge of the base. The angle of the base and sides varies largely, being in some cases a right angle, in others an obtuse angle. The sides are usually straight, but occasionally curve slightly inward.
b. The flange becomes a decided moulding and the sides are laid back very flat, forming with the base a line very nearly straight. The rim is also provided with a moulding.
c. The curve from centre to rim is continuous and slight; the flange being placed around the centre of the base.

Type 1.

17. (Plate LIX.) Half of a plate, measuring 0.127 m. in diameter. Dark reddish clay, with dark brown and red decoration.

Exterior. On base border of zigzags and bands; on side two narrow borders of zigzags and bands.

Interior. Similar decoration, with one zigzag border around the centre. **Fig. 76** gives the profile.



Fig. 76.

The other fragments belonging to this type (no plate being preserved entire) repeated the same scheme of decoration, with dots, vertical lines, or squares in place of the zigzags; the diameter of these plates varied between 12 and

Type 1 a.

Only one specimen of this type was found (**Fig. 71**), 10 cm. in diameter. The entire surface of the exterior was covered with a black glaze, with a broad band of the natural clay near the rim.

Type 1 b.

No covers of this type were found intact. The decoration consists invariably of broad or fine parallel lines, in black and red. On many the two are seen together with a sharp line of demarcation. The clay is much thinner than in covers of Type 2, which may account for all being in a fragmentary condition.



Fig. 74.

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The covers belonging to Type 2 were by far the most numerous. Though exhibiting considerable variation in their decoration, the general scheme seems fairly distinct.

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Both combined: i. e. the centre is glazed and the bands are confined to the outer part.
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Checkerboard on rim.
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Type 1.

17. (Plate LIX.) Half of a plate, measuring 0.127 m. in diameter. Dark reddish clay, with dark brown and red decoration.

Exterior. On base border of zigzags and bands; on side two narrow borders of zigzags and bands.

Interior. Similar decoration, with one zigzag border around the centre. **Fig. 76** gives the profile.



Fig. 76.

The other fragments belonging to this type (no plate being preserved entire) repeated the same scheme of decoration, with dots, vertical lines, or squares in place of the zigzags; the diameter of these plates varied between 12 and

15 cm. Another variety, represented by **Fig. 77**, showed a small moulding on the top and bottom of the exterior.



Fig. 77.



Fig. 78.

Type 2 a.

18 a and **b**. Two fragments from the same plate (profile in **Fig. 78**); diameter, 0.20 m. Dark red clay, showing traces of burning. Dark brown decoration on exterior, dark red on interior.

Exterior (**a**). "Running Dog" border around centre and bands; splashes on foot: "Running Dog" pattern on sides, splashes on rim.

Interior (**b**). Leaf rosette in centre with a border of alternate checkerboards and eight-pointed stars. "Running Dog" on sides.



Fig. 79.

19 a–d. Four fragments from same plate (profile in **Fig. 79**). Grayish clay, with black decoration.

Exterior (**a** and **b**). Base entirely covered with a black glaze on which the ornamentation is incised. Series of diamonds radiating from the centre, each inclosing an eight-pointed star which in turn incloses a diamond. Alternating with the points of the large diamonds are smaller ones. On sides bands and "Running Dog" border.

Interior (**c** and **d**). The bottom is left the natural color of the clay with radiating series of diamonds, similar to exterior, in black: without incised lines. Side pattern same as exterior. On rim, splashes.

Two technical methods are seen on this plate, painted decoration on interior, and incised on exterior. This, in a way, is paralleled in later times by the combination of **b. f.** and **r. f.** work on the same vase.

Type 2 b.

Other fragments (generally from large plates, 15–20 cm. in diameter) show the usual motives, checkerboards, zigzags, snakes, rosettes, rays, etc. None present any marked peculiarities.

Fragments of this type showed no new features in their decoration. **Figs. 80** and **81** show the principal variations of the form. The plates were usually of a large size, 25 cm. in diameter. **Fig. 80** had bands for its sole decoration, purple being applied freely.



Fig. 80.



Fig. 81.

Type 2 c.

Fig. 82 (profile). Diameter, 0.191 m. Entire, save for a small piece. On rim vertical lines and just below rim on exterior Geometric snake (incised lines).[1] Outside and inside ornamented with concentric bands in series.

This was the only plate which was recovered entire. Fragments of similar plates were numerous, but all showed the same decoration of concentric bands.

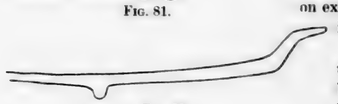


Fig. 82.

[1] The exterior was practically identical with the cover of a Geometric vase from Athens (*B. C. H.* XIX. [1895], p. 276, fig. 2), the snake being treated in precisely similar fashion.

MISCELLANEOUS FORMS.

Kothons. (*Berl. Cat.* VI. 111 and 112.)

This form of vase is shown by a few dozen fragments, none of which permitted any restoration. Furtwängler, in his catalogue (1100–1107), assigns all the vases in Berlin to the Corinthian style. The bulk of the Heraeum fragments, however, belong to the Argive style. One fragment was distinctly Mycenaean in character and another Geometric. Several of the handles showed traces of decoration which would warrant their belonging to the Corinthian style.

No fragments have been reproduced in our plates, since their decoration differed in no way from the usual Argive scheme. Bands encircling the rim, leaving the body of the vase plain, were the usual type, though lozenge and zigzags on the body were also found.

Ring-Form Aryballos.

Fig. 83. Height, 0.126 m.; diameter, 0.10 m. Dark red clay. Neck, handle, foot, and one side restored.[1] Around neck and base, rays. On front side interlaced lozenge pattern, with small circles at corners. On one side double guilloche; on other (almost entirely gone) a frieze, probably of animals. About a dozen fragments from similar vases were found.

The form differs somewhat from *Berl. Cat.* V. 110.



Fig. 83.

Several of the smaller vases which clearly belong to the Linear Argive class show a marked connection with the Geometric style. The clay in these vases is distinctly that used in Geometric, not Argive vases. The presence of similar vases in other parts of Greece has induced Dümmler[2] and Pallat[3] to regard them as imitations of Argive ware. It seems hardly likely that these small and unimportant vases should be avowed imitations of the Argive style made by potters who manufactured Geometric vases; more probably they are really Argive vases, the clay for some reason or other being that usually employed in the Geometric style.

Half a dozen complete vases of this kind were found at the Heraeum and quite a number of fragments.

Jugs.

Fig. 84. One-handled jug. Height, 0.065 m. Lip (probably trefoil) broken away. Coarse dark red clay, with reddish brown slip, decoration varying from brilliant black to dark brown. Stripes and triangles (interlacing lines) on shoulder; stripes on neck and handle. On either side of base of the handle a breast-like protuberance.



Fig. 84.

Similar examples have been found in Boeotia[4] and Tiryns.[5] The protuberances seem to denote a survival of prehistoric characteristics.



Fig. 85.

Fig. 85. One-handled jug. Height, 0.055 m. Reddish clay, with polished yellowish brown slip, dark brown decoration. Stripes on neck, handle, and base, three borders of zigzags and rays (points downwards, inclosing lozenges) on shoulder.

[1] That a foot was represented is clear from the rays around the base and a comparison of an aryballos in the British Museum from Kameiros, A 1075. Cf. *Jahrb.* II. (1887), p. 56, fig. 21.

[2] *Jahrb.* II. (1887), p. 20.

[3] *Athen. Mitt.* XXII. (1897), p. 271.

[4] *Jahrb.* III. (1888), p. 353, fig. 32, and XIV. (1899), p. 53, figs. 111 and 112.

[5] Schliemann, *Tiryns*, p. 400, No. 135.

15 cm. Another variety, represented by **Fig. 77**, showed a small moulding on the top and bottom of the exterior.



Fig. 77.



Fig. 78.

Type 2 a.

18 a and **b**. Two fragments from the same plate (profile in **Fig. 78**); diameter, 0.20 m. Dark red clay, showing traces of burning. Dark brown decoration on exterior, dark red on interior.

Exterior (**a**). "Running Dog" border around centre and bands; splashes on foot; "Running Dog" pattern on sides, splashes on rim.

Interior (**b**). Leaf rosette in centre with a border of alternate checkerboards and eight-pointed stars. "Running Dog" on sides.



Fig. 79.

19 a–d. Four fragments from same plate (profile in **Fig. 79**). Grayish clay, with black decoration.

Exterior (**a** and **b**). Base entirely covered with a black glaze on which the ornamentation is incised. Series of diamonds radiating from the centre, each inclosing an eight-pointed star which in turn incloses a diamond. Alternating with the points of the large diamonds are smaller ones. On sides bands and "Running Dog" border.

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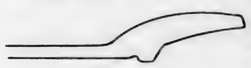


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Jugs.

Fig. 84. One-handled jug. Height, 0.065 m. Lip (probably trefoil) broken away. Coarse dark red clay, with reddish brown slip, decoration varying from brilliant black to dark brown. Stripes and triangles (interlacing lines) on shoulder; stripes on neck and handle. On either side of base of the handle a breast-like protuberance.

Similar examples have been found in Boeotia[4] and Tiryns.[5] The protuberances seem to denote a survival of prehistoric characteristics.



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Some three or four other jugs similar to **Fig. 85** were found, also fragments of oinochoai with the usual zigzag decoration, and a few fragments of skyphoi, with water birds in panels.

Openwork Vases.

The following fragments form a separate type by themselves, though not found in very large quantities. They belong to vases of the kalathos form, whose sides are pierced at intervals by openings, giving the effect of a basket. We have already seen this openwork principle applied to the supports of Geometric vases; Argive vases of the openwork type, however, were probably never used as supports, being far too small and fragile. Moreover, having a distinct kalathos shape, it is probable that we have here a separate variety of that form. It seems certain that these were a direct imitation of metal work, but an imitation which did not arise until after the Mycenaean epoch, seeing that metal vases of this description are not found in Mycenaean times. In view of their technique, it is probable that they belong to the early period of Class II.

Two separate forms of openings may be distinguished: (**a**) either the vase is divided into a series of legs with a long narrow opening sloping slightly from rim to base (in some cases these legs are joined halfway, thus giving a double series of openings), or (**b**) the vase is divided into two or three sets of triangular openings. Both methods may be employed on the same vase.

The scheme of decoration is simple, the available space being extremely small. Either the entire vase is covered with a dull black or brown glaze with parallel stripes of applied purple, or else to the natural clay parallel stripes are applied, leaving the rim free for a border of some pattern, zigzag, etc., etc.

20 a and **b**. (PLATE LIX.) Two fragments form a vase 13 cm. in diameter. Height cannot be determined. Greenish clay, with decoration in black and dark brown. Parallel stripes on sides, zigzags in series on rim.

This was the best preserved vase of form **a**. Some half a dozen bases and numerous fragments were found; one base showed a rather high foot with ray pattern.

Of form **b** only a few bases and fragments of sides, in very bad condition, were found.

Instances of such vases outside of the Argolid are not very common. There are three in Athens (No. 232 from Corinth, No. 10969 from Eleusis,[1] and a third) which have the series of triangular openings; one in Syracuse (Megara Hyblaea, tomb 640), one in the British Museum (A 1601), and one from Falisco (*Mon. Ant.* IV. pl. vii. 17). Somewhat allied is the kalathos in *Jahrb.* III. (1888), p. 241, fig. 23. Cf. also *Jahrb.* VI. (1891), p. 116, No. 9.

What the purpose of these vases was cannot be told with any certainty.

CLASS III.

ORIENTAL ARGIVE.

It is a difficult problem to decide how much outside influence caused the development of the Argive style from Class II. to Class III., and whence such an influence originally came. That the third class developed unassisted by such outside influence is impossible; at the same time the elements which are vital to the style, the parallel bands, incised lines,[2] ornaments in field and application of color have been seen either in Class II. or else

[1] I am not certain whether this is the vase described by Skias, Ἐφημ. Ἀρχ. 1898, p. 107, fig. 27.

[2] Boehlau is inclined to regard the Larissa fragments (*Aus Ionischen und Italischen Nekropolen*, p. 87, figs. 38–40) as the earliest use of the incised line. Several of our fragments (v. p. 127) are certainly older; that the incised line was a foreign innovation in Greek pottery I see no reason to believe.

in Geometric ware. Although the animal frieze comes into the Argive style during the end of Class II., it is very common during the middle Geometric period. Clearly it is some other characteristic which distinguishes Class III. from its predecessors.

This can only be the development of purely decorative patterns, such as the lotos, palmette, etc. Boehlau (*op. cit.* p. 108) has pointed out that the wreath pattern and dotted rosette are foreign to the early Attic style while thoroughly characteristic of the Argive (still termed by him Proto-Corinthian). It is this innovation combined with a wealth of decoration, incised lines, and recognition of the animal frieze as a principal scheme of decoration that constitute the elements of Class III. The presence of the curved palmette on the pyxis (cf. **Fig. 69**), combined with the Geometric motives, marks the transition stage between Classes II. and III., and also stands as one of the earliest examples of the palmette with curved stem. Boehlau's analysis of its development (*loc. cit.*) seems to be confirmed by our pyxis.

I do not, however, feel that he is right in contending that the Corinthian style cannot have developed from the Argive, as that would have been a "Rückschritt zur Zeit der Blüthe korinthischen Handels und Industrie" (p. 114). To my mind this objection cannot hold, since we know that Corinth possessed no previous ceramic art of her own, and, as was said before, the chief difference between the Corinthian style and Class III. of the Argive is that between skilled and unskilled labor, the foreign influence being the same in both. Why should we seek the direct prototypes of the Corinthian style in Asia Minor, when the Argive style, with which it has so much in common, lies so close to our hand?

The shapes included in Class III. have all been seen before in the previous classes, no new shape being introduced. They are: —

Lekythos,
Oinochoe,
Jug,
Skyphos,
Pyxis,
Plate.

Lekythoi.

The lekythoi follow one form (*Berl. Cat.* V. 102) with little variation, and were rather small, not more than 6 cm. in height. About twenty were preserved more or less intact, while at least fifty more were represented by fragments. The scheme of decoration is the same on all, parallel bands inclosing an animal frieze, or else the body of the vase is adorned with a plant pattern or some other similar decoration.

Although the use of incised lines to emphasize details does not originate in this period, it is one of its chief characteristics. Whether those vases which belong to Class III. but do not show this feature are necessarily older than the incised vases cannot be asserted with any accuracy. It is probable that for a time the use of both incised and unincised vases was common, and that the former technique supplanted the latter as the style became advanced. Certain it is that all vases which belong to the most advanced stage show the use of the incised line.

The lekythos described on p. 127 properly belongs to a stage between Classes II. and III. We have there the animal frieze in its simplest form, but without the use of the incised line.

Fig. 86. (Drawing on PLATE LXIV. 11.) Height, 0.043 m. Light greenish clay, with brilliant black decoration. Part of rim broken away, but traces of a ray pattern are still to be seen. Dots on neck, *guilloche* on handle, pot-hooks and rosettes on shoulder. Main frieze: three series of two concentric circles (with central dot)[1] separated by a palmette, ivy branch, and guilloche

[1] For similar arrangement of circles see *Ann. dell' Inst.* 1877, tav. d' agg. A B 15. There is a similar lekythos in Berlin, recently acquired.



Fig. 86.

(directly under handle). In field five small circles and a ϟ. Decoration worn away in places.

The form of this vase is slightly plumper than the usual type, which, combined with the absence of any animal frieze or incised lines, may point to this lekythos being one of the earliest instances of Class III. In spite of a certain reminiscence of Mycenaean motives, the palmette and ivy branch are distinctly characteristic of the later period of the Argive style. More remarkable is the treatment of the palmette as a separate motive without any connecting stems. We usually find the palmette combined with others in a chain and confined to the shoulder as a purely subordinate motive.

Fig. 87. Fragment of lekythos. Height, 0.033 m. Slate-colored clay, extremely fine, being almost as thin as fine cardboard. On shoulder, dots, rays, and a row of simple zigzags. Main frieze: four-spoked wheel and part of a circle with a leaf border inside. In field, bull's head full front, rosette, dotted circle, and a human head (probably female) in profile to right. Incised lines on the two heads.



Fig. 87.

The form of this lekythos is the usual type. It is somewhat allied to the preceding lekythos, in that the main frieze does not contain a series of animals, but circular motives. The wheel and the circle are common themes on Geometric vases. The use of the human head also is similar to that on the bottom of the oinochoe (v. p. 131).[1] I know of no other similar instance on an Argive vase. For the bull's head see **Fig. 88**.

Fig. 88 1–4. Height, 0.057 m. Found southeast of Second Temple. Greenish clay, with faded black decoration. On rim, rays with dots in the vacant spaces; series of alternating diagonal lines (suggestive of a herring-bone pattern) on handle. On neck ornaments shaped like an I. Palmette scroll on shoulder, with a hare on the right and some other animal on the left. Main frieze: in centre a bull's head, full front, with a bird below; to left two lions; to right lion and bull. Incised lines used on all the figures. Intact.

The style of the drawing is so distinctly primitive in its character, that its position as one of the earliest lekythoi of Class III. seems certain. That the drawing is not careless is proved by the extremely careful execution of the vase. Stylistically it is closely allied to the lekythoi in Dresden,[2] the British Museum,[3] Boston,[4] and the collection of Herr von Radowitz.[5]

Several features may be noticed. The bull is distinguished from the other animals by the shape of the hoofs and the *membrum*. The lion at the left (below the handle) has his body adorned with dotted circles and turns his face to the front as in the Corinthian style. This is probably one of the earliest instances of this peculiarity, for all the earlier lekythoi show animals in profile. The bull's head in the centre is probably a mere ornament in field, though apart from the previous fragment I know of no similar instance on an Argive vase. We find it used twice on the shields of the Macmillan lekythos[6] as a device. The other two lions bear a general resemblance to those on the Radowitz lekythos.

The ornament on the shoulder (3) shows the palmette scroll in its simplest form, but the addition of animals, either as ornaments in field or as part of the design, is new to me. That the right-

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hand animal is a hare is certain, but the identity of the other is doubtful. The assertion is frequently made, but without positive proof, that in vases of the Corinthian type, especially of aryballoi, where two panthers are seen with heads full front together and bodies in profile, that one



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Fig. 88.

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Fig. 89.

Fig. 89. (Drawing on Plate LXIV. 12.) Height, 0.044 m. Neck and handle missing. Yellow clay, with dark brown and reddish brown decoration, very brilliant. On base of handle, traces of a zigzag with small lozenges as ornaments in field. On shoulder, leaf rosette; on body, two friezes. Main frieze: panther, owl, panther and boar. Dotted rosettes, halved lozenges, and what may be a scorpion or a lizard,[1] as ornaments in field. Lower frieze: three dogs to right, with a single dotted rosette separating two of them. On base, rays. Incised lines used on all the figures.

In this vase we have an example of the latter period of Class III., but there are no striking features. The drawing is fair, especially good in the case of the boar. The

[1] As on Geometric vases. Cf. Plate LVII. 24.



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owl belongs more properly to the Corinthian style; its presence here (I do not know of its occurrence on any other Argive vase) is a point in favor of its later origin.

PLATE LXIV. **9 a** and **b**. Upper part of jug in form of a plastic male head, with the opening at the back. Height, 0.036 m. Dark reddish clay, with a pale yellow slip, red color applied. Hair, eyes, and beard expressed by incised lines. Through the head is a hole for suspension.

The type of face resembles slightly that on the figures of the Mycenaean 'warrior' vase. At the same time the applied color, use of incised lines, etc., show plainly that the vase belongs to the later Argive period. What the form of the vase was is uncertain;[1] it may have been similar to a jug from Cyprus (*Berl. Cat.* 72; Baumeister, *Denk.* p. 1951, fig. 2081). At all events, it is probably considerably earlier than the following vase.

PLATE LXIV. **10 a** and **b**. Height, 0.024 m.; diameter, 0.026 m. Top of lekythos. Greenish clay. Neck in form of three plastic female heads, with long hair, colored black, red, and blue respectively. On rim (badly broken), three borders of rays, pot-hooks, and wave pattern.

This fragment is the most perfect of any fragments of this period, and it is fair to assume that the remainder of the vase would vie with the best specimens of the style in point of execution. That this fragment belongs to an Argive lekythos seems probable, in view of the ornamentation of the rim.

The making of vases in 'Anthropomorphic' form is no new feature in Greek art, but the instances of it in the Argive style are rare. Somewhat allied to it is the Macmillan lekythos, though the top of that vase takes the form of a lion's head. The use of a human head (generally a female) on the rims of skyphoi or tops of pyxides of the Corinthian style is well known; this feature in the Argive style must mark the last stage of Class III.

21. (PLATE LIX.) Fragment of lekythos, form a trifle more rounded than is usual. Light greenish clay, black decoration. Warrior, head and fore leg of horse, with a crossed lozenge as ornament in field.

This fragment is curious in design and differs from the usual treatment. The silver *situla*[2] in Florence, a Phoenician or Etruscan work of the latter part of the seventh century, presents a similarity, which is so strongly marked as to afford grounds for deriving both from some common influence, though what that influence was cannot be determined with certainty. The warrior on our fragment wears a helmet, shield, and sword quite in the manner of his fellow on the situla. The arrangement of the bridle is curious, and I have been unable to find any analogous instance. The shield device is paralleled by some of our Geometric gems, and may point to our fragment as belonging to the elder period of Class III.

The vases just considered are the best examples of the lekythoi belonging to Class III. that the Heraeum yielded. The other vases and fragments did not differ materially from the types already discussed. Several of the lekythoi partially whole showed a double frieze of animals on the body, though a few fragments showed the animal frieze on the shoulder as well. One fragment had a broad border on the body left in the natural color of the clay, with a pomegranate chain on the shoulder somewhat after the Cyrenaic style. Several fragments showed the heads of sphinxes, a creature not as usual in the Argive style as in the Corinthian. As a whole these lekythoi are not superior to the types found in other parts of Greece.

Oinochoai.

The fragments of oinochoai were more numerous than those of the lekythoi, but the number of oinochoai preserved whole or partially was small. The technique is rather more

[1] A head somewhat similar may be found on a Ring-form Aryballos in Dresden (*Arch. Anz.* 1862, p. 162, No. 25). Although belonging to the same period as our fragment, it is fairly certain that ours did not belong to a vessel of similar shape.

[2] Amelung, *Führer druch die Antiken in Florenz*, p. 199, No. 221; Inghorami, *Mon. Etr.* III. pls. xix., xx.

advanced, some of the fragments being unexcelled by any Argive vase in point of delicacy and freedom of execution.

Two types may be observed.

1. Exactly similar to Type 1 on p. 128.
2. The Italo-Corinthian form (Wilisch, pl. ii. 16).

Type 1 consisted mainly of small vases, which were fairly well preserved, several vases being more or less intact; of Type 2 nothing but scattered fragments were found, and in no case could any vase be reconstructed. The shape of such fragments was the only guide in determining their form.

Type 1.

Two varieties of decoration are to be seen.

a. Upper part of body adorned with an animal frieze, the lower containing the usual line decoration.

b. Body of vase entirely occupied by the animal frieze.

a.

Fragments of this type were not very common. The simplest form corresponds in decoration to the lekythos on p. 127 (**Fig. 55**), having a frieze of animals (usually dogs) of the plainest description, without incised lines and with no ornaments in field except occasionally a dotted rosette. Some fragments showed two friezes on the body. Where the single frieze occurred, the lower part of the body was encircled by the usual parallel bands, or with a ray pattern on the base separated from the animal frieze by a checkered border or row of zigzags.

As a transitional type between **a** and **b**, a small oinochoe may be mentioned. This was 63 mm. in height, of greenish clay, and had around the base a frieze of birds with numerous ornaments in field (slightly more advanced than the Geometric type), the upper part of the body and neck covered with zigzags and parallel lines, all the decoration being very much faded. Two similar instances are at Syracuse (Cases IV. and VII.; provenience not stated), both with faded decoration; that in Case IV. showed traces of applied dark red color.

b.

22. Fragment of body of oinochoe. Reddish clay. On shoulder, leaf rosette, purple applied to the alternate petals. Main frieze: panther (head full front, body in profile) and sphinx to right (and part of another panther). In field, rosettes, crosses, etc. On base, rays. Dark red color is applied freely to the figures and incised lines used. Several other fragments very similar to this were found, most of them belonging to the base and exhibiting the ray pattern, with here and there a part of the frieze showing the foot of some animal.

23. Fragment of body of oinochoe. Greenish clay. On shoulder, leaf rosette, with alternate petals in applied purple. Main frieze: panther and sphinx to right facing another sphinx whose fore paws only are still visible. Rosettes, rhomboids, circles, etc., as ornaments in field. Around base, row of dots. Dark red color and incised lines used freely on all the figures.

A few fragments of necks were found which showed traces of an animal frieze, in addition to the usual Geometric designs.

Type 2.

It is to be regretted that this class, which contains some of the finest specimens of the Argive style, should be represented only by scattered fragments. It may easily be seen that such fragments as are here presented stand in a close relation to the Corinthian style, but are vastly better in technique.

Only a few of the fragments are here presented, the others showing merely parts of legs, arms, ornaments in field, etc. A few fragments seemed to belong to an older type in that the body of the vase was taken up by two, sometimes three friezes, without incised lines. These were distinctly inferior in technique and included figures of sirens as well as sphinxes and panthers. Dark red color was applied but sparingly. Ornaments in field were not very numerous, though one fragment showed the entire background covered with small dots.

The size of the vases to which these fragments belong cannot be estimated.

24 a and **b**. Two fragments of an oinochoe. Yellowish clay with a reddish tinge, lustrous black decoration. On base rays, and above an animal frieze. On **a** rear part of horse and goat back to back; on **b** a goat to right. Technique excellent, with free use of incised lines; no ornaments in field.

25 a–e. Five fragments of an oinochoe. Yellow clay, with lustrous black decoration. Ray pattern on base, with a narrow rosette border above, separating it from two friezes of animals and men, with rosettes in field. Incised lines freely used and dark red (now turned brown) applied to the figures. Technique excellent.

How the friezes were represented is difficult to say; **a** and **b** show a warrior to right holding a sword in his right hand, a spear in his left hand, and **c** the head of some animal (perhaps a deer) below and the legs of another above. Perhaps a hunt of some sort may have been represented. Whether the bird on **e** formed part of another frieze or is merely an ornament in field is difficult to say; the latter supposition seems more probable. That **a** and **b** belong to the same figure seems probable, though certainty is impossible, there being no point of contact between the two fragments.

Plate LXV. **2 a–c**. Three fragments of an oinochoe. Greenish clay. Free use of incised lines and dark red color applied freely.

a. Lower part of fragment is covered with a black glaze, on which are five parallel lines, two of yellow inclosing three of red. Above, on a whitish yellow ground (left white in the plate), the body and legs of a panther to left and the muzzle and fore leg of a deer, the figures being drawn in black.

b. From same frieze. Head and shoulders of a stag feeding to left,[1] with traces of a rosette (alternate dots in red) in field.

c. Above, in whitish yellow on a black ground, fore legs and part of hind paw of a panther to left. Below, on a whitish yellow ground, head of panther to right and rosettes in field. Red on rosettes and panther's head.

The true arrangement of these fragments is doubtful; it seems probable that the base of the oinochoe (represented by **a**) was covered entirely with a black glaze, with two friezes above, the lower white, the upper black, and that the rest of the surface was entirely covered by a black glaze. The legs of the panther on **c** are in the same color as the white ground of the vase.

These fragments, which are extremely fine in their execution, differ materially from other vases of the Argive or Corinthian style in the employment of two distinct backgrounds on the same vase, and suggests in a way the employment of two separate technical methods, such as we might expect to find in Asia Minor, and do find on sarcophagi from Clazomenae. In spite of the resemblance of an Aeolian oinochoe[2] to our vase, distinct technical differences exist. The white panther on the black ground is not drawn in incised lines (which are used to express details only), but the white paint has been applied over the black glaze, probably after the first firing. In that case the whole surface of the vase received its black glaze and black figures first, with the later addition of white figures painted on the black. It recalls in a measure that class of vases which combine both the black and red figure technique, where one figure is drawn in an incised outline and another painted in white with incised lines used to express details. But any actual connection between such vases and our fragments is not to be thought of. Also in spite of the very unusual

[1] This is one of the commonest motives in archaic vase painting. Cf. *B. C. H.* XXII. (1898), p. 441.

[2] Boehlau, *op. cit.* p. 99, fig. 48.

technique shown by our fragments, the style of drawing is so unmistakably Argive that no doubts can be aroused against their position in Class III.

As these were the only fragments found which show this peculiar double technique, speculation as to the influence which produced them seems futile. I should feel inclined to follow Boehlau's lead in supposing that the Aeolian ware was responsible, seeing that the relation between that and the Argive Class III. is very close. Whether any Rhodian influence (cf. *J. H. S.* VI. [1885], p. 184) was here at work is extremely doubtful.

Skyphoi.

Fragments and vases of this form were the most numerous in Class III. The majority of the fragments belong to large vases and show a style fairly advanced. Being more fragile than lekythoi, very few specimens were recovered unbroken. The form of the skyphos is the same throughout, the only variation being in the size of the vase. As in the case of the shapes just discussed, many fragments show an entire lack of incised lines and probably belong to an older class. The greater number, however, have incised lines, with purple, yellow, and red color freely applied. As a rule the bases are ornamented with a ray pattern, or parallel bands, the rest of the body being occupied by the main frieze of animals.

The rim is usually bordered by a Geometric pattern of some sort, occasionally by a second frieze of animals, narrower than the main frieze. The interior is always glazed red or black.

26. (Plate LIX.) Greenish clay, with black glaze on interior, nearly worn off. Ray pattern on base and frieze of sirens; separated by a checkered band, what appears to be a second narrower frieze as a rim border.

27. (Plate LIX.) Greenish clay, with dull black glaze on interior. Rays on base and animal frieze (cow). Cross as ornament in field.

This fragment is chiefly remarkable for the fact that it is the only fragment found at the Heraeum on which a cow is represented; this, in view of the close mythological connection between the animal and the goddess Hera, is rather surprising.

Fig. 90. Height, 0.047 m.; diameter, 0.066 m. Upper part with handles restored. Reddish yellow clay, with flaky black glaze on interior, decoration in dark brown. Frieze around base of panther and three other animals (perhaps deer) upside down. Poor execution.



Fig. 90.

It is probable that two friezes were represented. For discussion of the inverted frieze, v. **Fig. 91**.

The fragments just discussed probably belong to the earlier period. **Fig. 90** is certainly very much akin to the lekythoi on p. 127, and may mark the transition stage between skyphoi of Classes II. and III. The other fragments, which were quite numerous, do not differ materially from the usual types. The drawing of the animals was distinctly poor; dogs and panthers were chiefly represented.



Fig. 91.

Fig. 91. Height, 0.057 m.; diameter, 0.061 m. From Old Temple Terrace. Yellowish clay, with dull black glaze on interior, decoration in black and red. Main frieze (upside down) on base; three figures, man shooting an arrow at a deer to left, behind the man a lion with open mouth. Separated by a broad band is a narrow border on the rim with two vertical dashes on each side. Figures in dark red, incised lines used.

Only a few of the fragments are here presented, the others showing merely parts of legs, arms, ornaments in field, etc. A few fragments seemed to belong to an older type in that the body of the vase was taken up by two, sometimes three friezes, without incised lines. These were distinctly inferior in technique and included figures of sirens as well as sphinxes and panthers. Dark red color was applied but sparingly. Ornaments in field were not very numerous, though one fragment showed the entire background covered with small dots.

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Plate LXV. **2 a–c**. Three fragments of an oinochoe. Greenish clay. Free use of incised lines and dark red color applied freely.

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The rim is usually bordered by a Geometric pattern of some sort, occasionally by a second frieze of animals, narrower than the main frieze. The interior is always glazed red or black.

26. (Plate LIX.) Greenish clay, with black glaze on interior, nearly worn off. Ray pattern on base and frieze of sirens; separated by a checkered band, what appears to be a second narrower frieze as a rim border.

27. (Plate LIX.) Greenish clay, with dull black glaze on interior. Rays on base and animal frieze (cow). Cross as ornament in field.

This fragment is chiefly remarkable for the fact that it is the only fragment found at the Heraeum on which a cow is represented; this, in view of the close mythological connection between the animal and the goddess Hera, is rather surprising.

Fig. 90. Height, 0.047 m.; diameter, 0.066 m. Upper part with handles restored. Reddish yellow clay, with flaky black glaze on interior, decoration in dark brown. Frieze around base of panther and three other animals (perhaps deer) upside down. Poor execution.

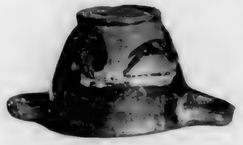


Fig. 90.

It is probable that two friezes were represented. For discussion of the inverted frieze, v. **Fig. 91**.

The fragments just discussed probably belong to the earlier period. **Fig. 90** is certainly very much akin to the lekythoi on p. 127, and may mark the transition stage between skyphoi of Classes II. and III. The other fragments, which were quite numerous, do not differ materially from the usual types. The drawing of the animals was distinctly poor; dogs and panthers were chiefly represented.



Fig. 91.

Fig. 91. Height, 0.057 m.; diameter, 0.061 m. From Old Temple Terrace. Yellowish clay, with dull black glaze on interior, decoration in black and red. Main frieze (upside down) on base; three figures, man shooting an arrow at a deer to left, behind the man a lion with open mouth. Separated by a broad band is a narrow border on the rim with two vertical dashes on each side. Figures in dark red, incised lines used.

Fig. 91 forms a companion piece to **Fig. 90** save for the use of incised lines. Through its primitive execution it probably belongs to the early period of Class III. But the chief peculiarity of the two vases lies in the subject being drawn upside down.

This peculiarity is extremely rare in vase painting. We have already seen it in the case of the Mycenaean jug, **Fig. 20**, making three from the Heraeum. I have been able to find but one similar instance anywhere else, a small skyphos at Syracuse (*Ann. dell' Inst.* 1877, tav. d'agg. C D 4, p. 47, No. 13), on which is a frieze of water birds, the subject being inverted in the same manner. What the object was in doing this is decidedly obscure; it can hardly have been accidental.

Several vases of the type found at Syracuse (*Not. d. Scav.* 1893, p. 457, right-hand figure) were represented either whole or in fragments, their execution being decidedly hasty. Several fragments were found where two friezes were represented, separated by a checkered band, while a large number belonged to very small skyphoi with a single frieze and a border of zigzags along the rim.

The fragments of skyphoi which belong to the best period of Class III. are rather larger in size than those just described. All employ the incised line.

PLATE LIX.

28. Fragment of large skyphos of dark red clay, with dark brown glaze on interior. Dark brown decoration. On base, rays; above, frieze of animals (panther).

This fragment, though inferior in technique, bears a close relation to the skyphos from Aegina (Pallat, *loc. cit.* pl. vii.). The drawing of the panther, however, is firm and decided, if conventional. The field is divided by an arrangement of vertical lines, curved and straight, similar to that found on the neck of an oinochoe from Aegina (Pallat, *loc. cit.* p. 271, fig. 6).

29. Fragment of a large skyphos, of which several other fragments were found. Reddish clay, with black glaze burnt red in parts, on interior. Main frieze: head of panther and hind quarter of horse to right. Double lozenge in field. Above, smaller frieze as a rim border, dog to left; field divided by a Geometric triangle scheme.

Although no fragments of the base were found, it seems probable that the base had the usual decoration of rays, with the main frieze directly above them. Several dozen fragments belonging to equally large skyphoi were found.

30 a and **b**. Two fragments from a large skyphos. Dark yellow clay, with brilliant black glaze on interior; also on interior, just below rim, three stripes in applied color, the upper two white, the lower red. Exterior: on rim, border of water birds with sigmas in field. Main frieze: **a**, wings, head, and hind quarters of a gryphon; **b**, rear part of a bird or a siren, with the back of a crouching sphinx. Below, upper part of an animal belonging to a second frieze. Red is applied freely on all the figures. Rosettes, sigmas, etc., as ornaments in field. Several other smaller fragments were found.

That three friezes were represented on this skyphos is evident, though their arrangement cannot be discovered. One fragment showed the back of a boar and another a helmet with a flying bird over it. Whether a boar hunt was represented is doubtful; probably both the main friezes were occupied by the usual series of animals, sphinxes, gryphons, etc., a male figure (with a helmet) being introduced among them.[1]

The style of the fragments represents the best period of the Argive ware. The border of water birds, so common in the earlier period, is here treated very freely and as carefully as the main friezes.

A dozen other fragments, from as many different vases, were found, which were very similar in technique to **30**.

31. Fragment of skyphos. Yellow clay, with bright red decoration. On interior black glaze, burnt red in parts. On base, ray pattern. Above, two friezes. Lower frieze, dog to right; upper frieze, panther to left. Reversed sigma in field. Red applied on dog's shoulder and belly of panther.

[1] In similar fashion to the Argive lekythos in Boston, *A. J. A.* 1900, pl. v.

32. Fragment of small skyphos of coarse dark red clay. Rays on base and frieze above, part of goat and tail of a bird or siren. Free use of incised lines.

Several other fragments of this particular skyphos were found, showing that one frieze only was represented. The style of this fragment is most distinctly transitional from the Argive to the Corinthian, and is similar to a fragment found at Aegina (Pallat, *loc. cit.* p. 319, fig. 37). This pro-Corinthian type was common at the Heraeum, fragments of this kind filling half a basket. Most of the fragments belonged to bases, and were of a grayish or greenish clay, with a pattern of fine rays on the base and a frieze above; the technique was extremely poor.

PLATE LXV. **3**. Fragment of small skyphos. Fine greenish yellow clay, with black glaze on interior almost entirely obliterated. Heads of two lions facing each other, drawn in black and red lines.

This fragment for fineness and delicacy of execution is equaled only by the best Attic red-figure work. The lines of the figures stand out from the surface of the clay as in Attic work, but the style and the use of the red line are most distinctly un-Attic; in fact, we have here a fragment of the Argive style in its most advanced stage and far superior to any Corinthian work. No other fragment belonging to this vase was found, and its shape is only established by the presence of a glaze on the back. Although this would argue also for a pyxis, the slight upward curve of the fragment makes a skyphos more probable.

Pyxides.

Except for the covers, practically none of these vases were found. One fragment of a pyxis showed two goats facing each other, but the lack of ornaments in field as well as the style would seem to assign it to the later period of Class II. The large pyxis on p. 137 may well be a transitional type from Class II. to Class III.

The same proportion between the pyxides and their covers, which we have already mentioned, held good in the case of Class III., as the covers were quite numerous, while hardly any pyxides themselves were found. The subject on all was the same, a frieze of animals on the outside, with or without ornaments in field, and rays radiating from the centre. The two best examples are given below.

33. Fragment of cover. Polished yellow clay, with dark brown decoration. In centre, rays; animal frieze, panther and part of another to right. Careful drawing, free use of incised lines.

34. Yellowish clay. In centre, rays; animal frieze, panther to left with rosettes in field. Checkered border. Decoration in black with red applied to panther's neck and belly. Incised lines freely used.

This is one of the best specimens of drawing. It is worth noting, as a curious fact, that the left-hand part of the fragment was picked up at the Heraeum by Dr. Olcott of the American School at Rome, in the spring of 1898, three years after the completion of the excavation, and on being brought to Athens was found to fit with a fragment excavated four years before.

A small cover was found with a single zone of figures precisely similar to those on an aryballos from Orchomenos (*B. C. H.* XIX. [1895], p. 196, fig. 18).

Jugs (Kannen).

Whether the following fragments are to be included under this head is doubtful, but as it does not seem possible to class them as lekythoi or oinochoai, the jug seems the only possible form. It is probable that the form of PLATE LXVI. 3 corresponds more closely to jugs of the Phaleron type, and if a trefoil lip be assumed, it should by rights

be classed among the oinochoai. No trace, however, of a neck was found, so that the point must remain doubtful.

PLATE LXVI. **3**. Two fragments from one-handled jug, similar in form, perhaps, to one from Megara Hyblaea (*Mon. Ant.* I. p. 811). Dark brownish yellow clay, with fine polished surface. Decoration from black to reddish brown. On base, rays. Main frieze: two sphinxes (back of head and fore legs of right-hand figure, lower legs of left-hand figure missing) facing each other, with an elaborate scroll pattern between them. On the left, tail of an animal (probably a goat); and on the right, body and legs of another goat. Crosses and rosettes as ornaments in field. On shoulder, rays (of interlacing lines) alternating with pot-hooks. Incised lines freely used, and the wings of the sphinxes are treated alternately in black and natural clay divisions, the latter ornamented with dots; the leaves of the palmette scroll are treated in similar fashion. The glaze on the body of the right-hand animal and on the right hind leg of the right-hand sphinx is badly worn.

A certain similarity may be found on a fragment from Athens,[1] which is certainly not Early Attic and is declared by Pernice to be Boeotian. There two friezes of figures are represented, sphinxes above and deer below. The figures show a very elementary use of the incised line and are distinctly more primitive in treatment than the figures on our fragment.

In spite of an apparent similarity, the styles of the two fragments differ considerably. That our fragments are distinctly Argive I see no reason to doubt. The drawing is precisely the same as that already seen on our best fragments, and the use of the incised lines shows a very advanced technical skill. The ornaments in the field are treated elaborately, but are relegated to a very minor position (except the palmette scroll).

The treatment of the wings on the sphinxes is extremely curious, and I have been unable to find any similar case;[2] it differs materially from the Athens fragment. A vase in the British Museum (A 1323) shows the same arrangement of hair,[3] which is gathered in a heavy mass behind, with incised divisions (as in the case of the Tenean Apollo) and little locks over the forehead. The right-hand animal shows no new peculiarity.

So little of the palmette scroll is left that its reconstruction is doubtful. It is certain that four spirals and three palmettes were represented,[4] but whether it ended at the bottom in a palmette similar to that on the top cannot be said. Judging by the palmette scroll on the amphora from Melos (Rayet and Coll. *Hist.* pl. ii.), it seems more probable that the scroll here was represented in similar fashion, with four spirals arranged in cross fashion and a palmette on four sides between each spiral.

35. Fragment. Greenish yellow clay, with black decoration. Incised lines freely used. Two horses' heads to right, evidently part of a biga. Good technique.

It is doubtful what the form of the whole vase was. The heads are drawn in too large a scale for a lekythos, and as no trace of a glaze can be found on the interior it cannot have belonged to a skyphos. The curve of the fragment seems best suited to a small jug, similar in shape to **Fig. 86**. The bridle of the horses seems to be the same as that on PLATE LIX. 21.

Plates.

Fragments of plates of the Oriental Argive style were very scarce, hardly more than half a dozen being found.

36 a and **b**. Two fragments of a plate, diameter uncertain. Reddish yellow clay, with black decoration on one side, burnt red on the other. The subject on both sides is the same, — a frieze of panthers, one crouching. The technique of the obverse is better than that of the reverse, the drawing being more careful.

We see from **a** that the centre was occupied by a star pattern, but what the outer border of the frieze was cannot be told.

[1] *Athen. Mitt.* XX. (1895), p. 121. pl. iii. 2.

[2] The pinax from Rhodes (*B. C. H.* XIX. [1895], p. 74, fig. 2) is similar save for the lack of dots.

[3] Cf. also *Not. d. Scav.* 1895, p. 186, fig. 87.

[4] Cf. *Jahrb.* II. (1887), p. 57, fig. 23.

Alabastra.

That the alabastron had its origin during this period and not during the Corinthian seems fairly evident. What caused its growth is a matter of doubt. It is possible that it may have developed from the lekythos, since the alabastron resembles strongly a lekythos minus a neck and handle, turned upside down. The fragments of this shape were very numerous, especially those with a scale pattern, but few were preserved whole.

Two types are represented.

1. Form *Berl. Cat.* v. 109, without foot.
2. Form Pottier, *Vases du Louvre*, pl. 41 E 423, with foot.

Type 1.

Three varieties of ornamentation are seen.

a. Simple linear decoration. Leaf rosette around neck and base, bands, checkered bands on body. Red lines applied freely. Cf. Pottier, *Vases*, pl. xxxix. E 32.

b. Same decoration except for addition of one animal frieze, sometimes more, around the base.[1] Incised lines are not used on the animals at all. The fragments were numerous, and one vase (height, 0.074 m.) was preserved almost complete.

c. Body of vase almost entirely covered with a scale pattern, large or small, as in Pottier, *Vases*, pl. xxxix. E 309, 319. A red dot is applied to alternate scales. This is the commonest type, half a dozen vases being found intact and numerous fragments.

The animal frieze occasionally occurs together with the scale pattern.

Type 2.

Only a few scattered fragments of this type were preserved. Half of one vase was preserved with three animal friezes, very roughly drawn, no incised lines being used.

Aryballoi.

Although the aryballos is a thoroughly characteristic shape of the Corinthian style, a number of them were found at the Heraeum which differed entirely from the Corinthian aryballi in point of technique and had a decoration purely linear in character. This would seem to warrant their belonging to the Argive period, towards the beginning of Class III. All show the use of applied color in an advanced stage, and this, together with the form, is more in favor of their connection with the later period of the Argive style than the earlier.

The earliest instance seems to be an aryballos of coarse red clay, with black glaze on the shoulder. The rest of the vase is entirely covered with a white wash, almost entirely worn away, with no traces of other decoration. No case of this peculiarity can be found in Corinthian vases; we have already seen it on Mycenaean vases. Cf. p. 93.

Fig. 92. Height, 0.07 m. Neck and handle restored. Black glaze over all, burnt red in places. On body broad band of dark red color applied, bounded above and below by two narrow bands inclosing row of dots applied in white.



FIG. 92.

This type seems fairly common. There are similar examples in the British Museum (A 1028, from Kameiros), Naples (Rac. Cum.), and three at Syracuse from Megara Hyblaea (Tombs 784, 941, 980).

Other vases showed either a single broad band of applied red, or a red band with a smaller white band on each side. One fragment was found of an aryballos which was divided by incised lines with gore-shaped divisions (like a child's leather ball), the gores being colored alternately red, yellow, and black.

Specimens precisely similar are in the British Museum (A 1027, 1031).

[1] Cf. the alabastra from Orchomenos. *B. C. H.* XIX. (1895), p. 192, figs. 16, 17.

be classed among the oinochoai. No trace, however, of a neck was found, so that the point must remain doubtful.

PLATE LXVI. **3**. Two fragments from one-handled jug, similar in form, perhaps, to one from Megara Hyblaea (*Mon. Ant.* I. p. 811). Dark brownish yellow clay, with fine polished surface. Decoration from black to reddish brown. On base, rays. Main frieze: two sphinxes (back of head and fore legs of right-hand figure, lower legs of left-hand figure missing) facing each other, with an elaborate scroll pattern between them. On the left, tail of an animal (probably a goat): and on the right, body and legs of another goat. Crosses and rosettes as ornaments in field. On shoulder, rays (of interlacing lines) alternating with pot-hooks. Incised lines freely used, and the wings of the sphinxes are treated alternately in black and natural clay divisions, the latter ornamented with dots: the leaves of the palmette scroll are treated in similar fashion. The glaze on the body of the right-hand animal and on the right hind leg of the right-hand sphinx is badly worn.

A certain similarity may be found on a fragment from Athens,[1] which is certainly not Early Attic and is declared by Pernice to be Boeotian. There two friezes of figures are represented, sphinxes above and deer below. The figures show a very elementary use of the incised line and are distinctly more primitive in treatment than the figures on our fragment.

In spite of an apparent similarity, the styles of the two fragments differ considerably. That our fragments are distinctly Argive I see no reason to doubt. The drawing is precisely the same as that already seen on our best fragments, and the use of the incised lines shows a very advanced technical skill. The ornaments in the field are treated elaborately, but are relegated to a very minor position (except the palmette scroll).

The treatment of the wings on the sphinxes is extremely curious, and I have been unable to find any similar case:[2] it differs materially from the Athens fragment. A vase in the British Museum (A 1323) shows the same arrangement of hair,[3] which is gathered in a heavy mass behind, with incised divisions (as in the case of the Tenean Apollo) and little locks over the forehead. The right-hand animal shows no new peculiarity.

So little of the palmette scroll is left that its reconstruction is doubtful. It is certain that four spirals and three palmettes were represented,[4] but whether it ended at the bottom in a palmette similar to that on the top cannot be said. Judging by the palmette scroll on the amphora from Melos (Rayet and Coll. *Hist.* pl. ii.), it seems more probable that the scroll here was represented in similar fashion, with four spirals arranged in cross fashion and a palmette on four sides between each spiral.

35. Fragment. Greenish yellow clay, with black decoration. Incised lines freely used. Two horses' heads to right, evidently part of a biga. Good technique.

It is doubtful what the form of the whole vase was. The heads are drawn in too large a scale for a lekythos, and as no trace of a glaze can be found on the interior it cannot have belonged to a skyphos. The curve of the fragment seems best suited to a small jug, similar in shape to **Fig. 86**. The bridle of the horses seems to be the same as that on PLATE LIX. 21.

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The earliest instance seems to be an aryballos of coarse red clay, with black glaze on the shoulder. The rest of the vase is entirely covered with a white wash, almost entirely worn away, with no traces of other decoration. No case of this peculiarity can be found in Corinthian vases; we have already seen it on Mycenaean vases. Cf. p. 93.

Fig. 92. Height, 0.07 m. Neck and handle restored. Black glaze over all, burnt red in places. On body broad band of dark red color applied, bounded above and below by two narrow bands inclosing row of dots applied in white.



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This type seems fairly common. There are similar examples in the British Museum (A 1028, from Kameiros), Naples (Rac. Cum.), and three at Syracuse from Megara Hyblaea (Tombs 784, 941, 980).

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NOTE ON THE USE OF APPLIED COLOR IN THE MYCENAEAN, GEOMETRIC, AND ARGIVE STYLES.

During the last three chapters, repeated instances of vases having various colors applied to their surfaces have been mentioned, and as this feature is such a prominent one on the Heraeum vases and so common during the succeeding vase classes, Corinthian, Rhodian, etc., it seems proper at this point to discuss it briefly.

For this technique no satisfactory term exists. Cecil Smith (*J. H. S.* VI. [1885], p. 184) uses the term "Dorian" and distinguishes between an "Oriental" style, i. e. the use of incised lines and applied purple or red color, and the "Dorian" style, or silhouette drawing with details in white, a feature common on much of the late seventh century polychrome work in Rhodes and Asia Minor. It is, however, perfectly certain that applied color was used by potters of the Mycenaean age, and even earlier, since the pre-Mycenaean ware found by Flinders Petrie in Egypt (*J. H. S.* X. [1890], pl. xiv. p. 271) shows the same polychrome decoration, so common on Egyptian wall-paintings, applied to the vases themselves. Crete (*Mon. Ant.* VI. pls. ix. and x.) has also produced a large amount of similar ware which belongs to the early part of the Mycenaean period. During the Mycenaean period in the Argolid its use would seem to have been fairly common, since at the Heraeum we find it on fragments of both the dull and lustrous styles, and Furtwängler and Loeschcke's Class I. (lustrous finish) also shows that it was extensively employed. During the Geometric and Argive styles at the Heraeum we find it very frequently, though it does not seem to have been in general use until the rise of the Oriental influence in Greece. All these facts would seem to show that this technique did not owe its origin to the bright-colored fabrics of Asia Minor (especially Samos), though they were, very probably, instrumental in promoting its growth on Greek soil, and also that the term "Dorian" is hardly accurate or comprehensive enough, since the origin of the technique must be looked for long before the Dorian invasion, or, if that event be denied, before the end of the Mycenaean period.

As a regular sequence of this technique has not been found (so far as I know) outside of the Argolid, it may perhaps have been a peculiar feature of the pottery made in that locality; since, however, it is a purely accessory feature it can hardly stand by itself as a separate entity, and the fragments which show its use are not to be separated from the regular vase-classes to which they belong.

During the Mycenaean period at the Heraeum, only a few fragments of the dull finish, and of Class III. lustrous finish, show this technique. It is fairly common on fragments of the Geometric and Argive (Class II.) styles, while with Class III. of the Argive through the Corinthian style it seems to be an integral part of the decoration.

On Plate LX. the most representative fragments only are given, following the chronological order of the preceding chapters.

MYCENAEAN.

Dull Finish.

Only one fragment (Plate LI. 7, p. 13) showed the application of dark red color.

PLATE LX.

Lustrous Finish, Class III.

1. Fine dark red clay, exterior entirely covered with a brilliant dark brown glaze, on which is a spiral in white; careful technique; the fragment belongs to III. 1.

2. Coarser yellowish clay, similar technique. Two circles with a dotted border inside; or possibly the heads of a murex pattern.

3. Fine brick red clay, black glaze on exterior, dark brown on interior. Upper part of palmette pattern applied in yellow.

These were the only Mycenaean fragments possessing any interest. Several others were found showing traces of white or yellow paint.

GEOMETRIC.

The number of Geometric fragments that show this use of applied color was quite large, filling nearly a basket. All such fragments invariably belong to the earlier period of the style rather than the later; i. e. their decoration (apart from their polychrome feature) is purely Geometric or linear, and in no case of a later Geometric fragment representing animals or *genre* scenes did this technique occur. Outside of the Argolid this technique is seldom found; as far as I can discover, only a few scattered Dipylon vases in Athens show it at all.

4. Fragment of an amphora probably. Yellow clay, with a broad glazed band of dark red covering the rim on the interior, over which two thin white stripes are applied. On exterior, dark brown glaze. Design applied in white; on rim, zigzag; on body, series of zigzags in a panel bounded by vertical and horizontal lines. On base, rays.

5. Dark red clay, burnt gray on exterior. Dark red glaze on inside, dull black outside, with design in white, dotted rosette above, and zigzag between horizontal stripes. Several other fragments of this vase were found, also fragments representing half a dozen other vases of similar technique.

6. Red clay, black glaze on interior; reddish glaze on exterior and design in yellow, horizontal stripes and a border inclosing a "Running Dog" pattern. The color is applied thickly.

7. Red clay, with dark brown decoration. On upper border, a dotted lozenge chain applied in yellow.

8. Fragment of foot of large vase, shape uncertain. Red clay, with red glaze on exterior. Moulding on base. Broad meander pattern applied in yellow, bounded by broad stripes of yellow and narrower ones of red. Careful technique.

Plate LXVI. **1.** Dark gray clay, with dark brown glaze on exterior. Meander pattern applied in red, with yellow border. Above, broad stripe of red. Several other fragments of this vase were found. Another fragment had a similar meander in yellow, bordered by red and white stripes.

2. Fragment of a vase with wide opening. Yellow clay, with black glaze on exterior. Broad band of yellow, with red border lines. On the yellow band a simple meander in red, with splashes of yellow in the interstices. Fragments of the rim were found which showed identically the same decoration on the lip.

The bulk of the fragments belonged to the rims of large bowls, having a flat surface on the top, and covered with a black or dark brown glaze on which broad bands of red, yellow, or white were applied. On these in turn was a pattern, usually a meander in red or yellow.

Taking the Geometric fragments of the Heraeum as a whole, the use of applied color seems to have been occasional rather than usual, and in only a few cases (most of them have been given above) does it form an important part of the decoration.

ARGIVE.

The number of Argive fragments which show the use of applied color is innumerable. In the majority of the Argive vases already discussed the slender band of red or yellow

is extremely common, but is used mainly as an ornamental accessory. The vases where the only decoration consisted of applied color are not very numerous in proportion to the rest.

No fragments belonging to Class I. showed this technique. In Class II. the fragments were much more numerous; in Class III. the use of applied color is so universal as an accessory ornament that few attempts were made to employ it as the only decoration.

9. Fragment of skyphos. Reddish clay, with a brilliant brown glaze, burnt red on interior, on both sides. Yellow stripe on interior just below rim. Design in yellowish white; double panel inclosing double circles. Technique very good.

10. Fragment of skyphos. Dirty yellow clay, with dull black glaze on both sides. Double triangles in yellowish white laid on thinly, above a horizontal stripe. This motive is identical with that already seen on the necks of the oinochoai.

Two fragments of a skyphos exactly similar to those from Aegina (Pallat, *loc. cit.* p. 277, fig. 9) and Eleusis (Ἐφημ. Ἀρχ. 1898, pl. ii. 3, p. 115) were found.

11. Fragment of oinochoe. Bright yellow clay, with brown glaze exterior. Parallel bands inclosing zigzag in whitish yellow.

Three more fragments of this vase were found and about a dozen other fragments from similar vases, with identical decoration. Fragments of necks were more common, one almost entire, but showing the same motive of zigzags. Cf. neck of oinochoe on PLATE LIX. 8, which belongs here.

The following fragments belong to Class III.: —

12. Fragment of large skyphos. Dark reddish clay, with black glaze on exterior. Between two broad bands of red a palmette in incised lines. The motive resembles strongly those found on some of our bronze fragments.

13. Fragment of oinochoe or lekythos. Fine yellow clay, dull black glaze on exterior. Lotos palmette in whitish yellow, with incised lines. Below, four stripes, the outer white, the inner red.

14. Fragment of bowl. Yellow clay, with red brown decoration. On exterior, rays (red applied) and a horizontal guilloche. On interior, meander pattern with fragmentary applications of yellow, and a wave pattern around the centre.

Besides the fragments already mentioned, several dozen were found which belong to rather large skyphoi, 10–15 cm. in height, of a dark red or yellow clay, the exterior only being covered with a dull dark red glaze. On the shoulder and rim is the only decoration, consisting invariably of two or three parallel stripes of applied red, bordered above and below by a white or yellow stripe.

A class of fragments similar in technique to the Attic black- and red-figured styles will be discussed in Chapter VII.

POLYCHROME VASES, OR DECORATION ON A WHITE GROUND.

Before leaving the subject of the use of applied color, a few fragments merit attention. These showed the so-called 'polychrome' technique, having a whitish yellow background on which the design is applied. These fragments were not very numerous, not more than a dozen being found.

PLATE LXV. 4. Saucer, one side broken. Diameter, 0.058 m.; height, 0.017 m. Dark reddish clay, exterior covered with a white wash, mostly worn off. Same on interior, with a red band on rim and a lead-colored band below; around central boss a rosette in red, with lead-colored lines in the loops.

This saucer belongs to the series already discussed on p. 125, and is perhaps the earliest Argive vase at the Heraeum which shows this 'polychrome' technique.

PLATE LX.

15. Fragment of plate. Yellow clay, with a black glaze on exterior, over which are parallel stripes of white inclosing a row of dots. On interior, over a whitish yellow wash, a palmette, alternate leaves black, with white dots. Incised lines. This fragment belongs to Class III., and is similar in point of decoration to **16**. **15** shows some similarity to Naukratis ware, but there is nothing to justify its being considered as belonging to that style.

16. Fragment of plate. Dark red clay, covered with a whitish yellow slip. On exterior frieze of animals, with tongue pattern on rim. On interior, frieze of geese in black, red (faded) applied to bodies, with zigzag band below. On rim, tongue pattern, red applied to each tongue.

CHAPTER V.

MISCELLANEOUS TYPES.

BEFORE proceeding to the discussion of the Corinthian style proper, it seems best to introduce a chapter on certain vases and fragments, which, though allied to the two great vase-classes just discussed, yet stand apart by themselves on account of certain peculiar features both of clay and design.

It is difficult to decide on a proper term for these vases. That they were imported into Argos is possible but improbable, seeing that foreign-made vases are extremely scarce at the Heraeum. Moreover, it is more difficult to find analogies for them outside of Argos than at the Heraeum itself, though even there such analogies are extremely rare. The most probable explanation is, that all of them are experiments in the making of certain types, which were not continued; this alone will account for the wide difference that exists between them and the other Heraeum vases, not to speak of foreign vase-classes.

The vases and fragments represented here fall, roughly speaking, in the eighth century, though a few may be dated a few years later than B. C. 700. Some are equally related to both the Argive and Geometric styles; others again resemble more nearly purely foreign styles like the 'Island' types, Melian, Rhodian, etc.

Fig. 93. Oinochoe; height, 0.19 m. Handle and parts of body restored. Brownish yellow clay, with darker slip, dark brown decoration.

On rim four parallel stripes; on neck "Running Dog" pattern, and below a frieze, four pairs of lions and snakes to right. On shoulder Geometric snake, with round balls and dotted rosettes in field. On body, two borders. "Running Dog" above, zigzag (continuous) below, with a dotted row above and below, and separated by usual parallel stripes. On base, rays, points downward. On all the decoration (except the parallel stripes, dotted rows, and rays) small round dots of white.



a. *b.*

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a. *b.*

Fig. 93.

This oinochoe is by far the most peculiar vase that the Heraeum yielded, and is remarkable for its technical features as well as its decoration. The form seems to be a cross between the two Argive oinochoai already discussed (**Figs. 56** and **57**).

Technique. The clay resembles more closely that used in vases of the Geometric style than in the Argive. The addition of the white dots in such numbers is peculiar but not unique, as it was found on several other Heraeum fragments, and a few vases outside of the Argolid.[1] It is certain, however, from Mycenaean fragments, that it was a common feature in the Argolid from the earliest times.

Decoration. This oinochoe differs from all the other Argive types in having an animal frieze on the neck, while the body is covered with the ordinary Geometrical motives.

In spite of the Geometrical motives on the body of the vase, it may be safely asserted that our oinochoe does not belong to the Geometric style, since the peculiar white dots never occur, so far as I know, on purely Geometric vases, nor has the style of the lions any connection with the lions on Geometric vases.[2] A closer connection seems afforded by the Phaleron jugs, since there we find the same employment of white dots, as well as the use of the neck for the main frieze. But the presence of the Geometric snake on the shoulder is against any such connection, since, as far as I know, that motive never occurs on any jug of the Phaleron type, nor has the style of our oinochoe anything in common with them. The Gamedes oinochoe is clearly of a later date than ours, and cannot therefore serve as a criterion for any doubtful point.

That our vase is of native workmanship seems to me extremely probable. The presence of the white dots on a few foreign-made vases is offset by the presence of fragments from as many vases at the Heraeum, and the use of the neck in the Phaleron jugs for the principal frieze is not a common peculiarity. Moreover, the style of our vase is earlier, if anything, than that of the Phaleron jugs, and would seem rather to point to an Argive influence on that class of vases (as was already suggested) than vice-versa. We have seen already how common the use of applied color was in all vases manufactured in the Argolid from the Mycenaean times downwards, so that this feature cannot be considered as lacking parallels in that place.

The date of our oinochoe must fall during the period of Argive Class II. The snakes and the other Geometric motives make this probable. Moreover, there seems to be no reason for seeing any trace of Oriental influence here; the lions have nothing in common with the type of lion in Class III., and the lack of incised lines is in favor of an early date, probably about the middle of the eighth century.

The combination of the lion and snake in pairs is extremely curious; I have been unable to find any similar instance. That a lion was intended is evident, though the prancing monster is more like the creation of a nightmare than the noble monarch of the desert. The presence of the lions is interesting, as they are not represented fighting, but as a purely ornamental feature. This would seem to be one of the earliest instances of the animal frieze, and would show that if not commonly employed, it was at least known to the vase-painter before the spread of Oriental influence in Greece, and need not be considered as a purely Eastern innovation.

PLATE LX.

17 a and **b**. Two fragments from a large amphora. Coarse brick red clay, with a reddish yellow slip. Decoration varying from black to red. Around interior of rim, band of black glaze. White dots applied to all the decoration.

a. Lion in panel formed by two stripes inclosing dotted row, and part of a scroll. Traces of a rosette (?) above the lion's head.

[1] The following examples are known to me: Warrior Vase (*Myk. Vas.* p. 68, pls. xlii. and xliii., and Schliemann, *Tiryns*, pls. xiv., xv., xvii. *b*, xxi. *a*, *b*, xvii. *c*); Aristonophos Vase (*Mon. dell' Inst.* IX. pl. iv.); Gamedes oinochoe (Rayet and Collignon, *Hist.* p. 81, fig. 42); two Phaleron jugs (Boehlau, *Jahrb.* II. [1887], p. 45, figs. 3, 4 *e*, 4 *f*); plate in British Museum (A 1539; Campanari Col.). The body of the stag on this plate is filled in with white dots; oinochoe in Zurich (*Mon. dell' Inst.* IX. pl. v. 2) (frieze of warriors, dots on shields); two vases from Falisco (*Mon. Ant.* IV. p. 267, fig. 127; p. 291, fig. 147). The list might doubtless be materially increased.

[2] Cf. Furtwängler, *Arch. Zeit.* 1885, p. 135. pl. viii. 2. For discussion of the lion in the art of this period, v. Boehlau, *l. c.* p. 35.

b. Scroll ending at each end in a trefoil. Base of handle preserved.

Fig. 94 shows the restoration of the design. The form is not absolutely certain, nor can the height be determined, though, judging from the size of the fragments, the vase must have measured about 30 cm. in height. It seems fairly certain, however, that no other decoration existed on the vase unless we suppose a similar design on the reverse and that the restoration here given is correct.



FIG. 94.

The technique is precisely similar to **Fig. 93**, and as the resemblance between the lions is so strong we may almost assume that both vases were painted by the same artist. The scrolls which bound the panels are interesting, and so far a similar case does not occur to me. There is a certain resemblance between the trefoils and the ivy leaf on Mycenaean vases (cf. *Myk. Vas.* XXI. 152; also *J. H. S.* XI. [1890], pl. xiv. 1), but whether the trefoils represent a development of the latter cannot be told.

18. Fragment of a large vase, perhaps an amphora. Dark reddish clay, exterior covered with a dull dark brown glaze. Broad band of white with, a row of small dots on each side.

This fragment, though differing considerably from the two vases just considered, has been included here on account of the presence of the white dots. It presents this peculiarity that the broad band of white is not painted over the glaze, since no trace of glaze can be found under it. The clay is coarse and more akin in texture to vases of the Geometric style, but it cannot belong to that class, since it seems certain that the entire vase was covered with a glaze, a peculiarity entirely foreign to Geometric vases. We have already seen this peculiarity in the case of other Argive vases, and it is probable that we have here a fragment of a vase which belongs to the same class as those discussed on p. 158.

PLATE LXVII.

Seven fragments from the base of a bowl with tall base. From Old Temple Terrace (probably). Height cannot be determined. The fragments have been joined together to form the base (8). Height, 0.425 m.; diameter at base, 0.29 m.; diameter at top, 0.16 m. The original vase probably measured about 80 cm. in height.

Brick red clay, covered with a brownish yellow slip. Decoration uniformly black, with yellow paint added freely. Incised lines used on the figures of the animals around the base.

The form of the vase was probably a large deep bowl resting on a tall base, similar to a vase in Athens from Menidi (*Jahrb.* XIV. [1899], p. 108, fig. 10, or p. 126, fig. 29). Of the bowl only a small part is preserved in fragment 3; all the other fragments belong to the base.

Around the base are three friezes, and a narrow frieze at the bottom of the bowl.

Base. Lower frieze (4, 6, 7). Border, a guilloche of black and white strands (as in PLATE LIX. 5). Separated from this by three stripes, a frieze of animals. What these animals are cannot be determined. On 4 and 6 we have an animal crouching, with traces of what may have been a horn on its head, and the tail of another, which projects into the frieze above. The first animal is clearly crouching, and the body is covered with scales similar to *Athen. Mitt.* 1897, p. 309, fig. 31. Incised lines on the foot, and on tail.

Separated by three stripes is another frieze, 1, 2, 4, and 5, on which a combat is represented. Portions of eleven warriors are preserved, six to right, four to left, and a fallen warrior in the centre.

In the centre of the frieze (4), a dying warrior to right stretching his arm behind him. His leg is drawn in outline, and as no filling in with black or application of yellow is seen, it seems probable that carelessness on the artist's part was responsible for this deficiency. On his shield is a rosette, with yellow applied to five of the lobes; yellow is also applied to the headpiece of the helmet. On the left are two warriors advancing to right, both armed with helmet, shield, greaves, spears, and sword.[1] Yellow is applied to the headpieces of the helmets and to the greaves. The

[1] This is not absolutely certain, except in the case of the first figure, where the object is too thick to be a spear.

first warrior has a checkered border on his helmet, and a whirl pattern with a lozenge border on his shield; the warrior behind has a four-pointed star inclosed by a checkered border for his shield device. Facing them to left, parts of two warriors; nose, tip of helmet, shield, and one leg of the first warrior preserved, shield and one leg of the second. Yellow applied to greaves. The first warrior is armed with a spear or sword exactly like his opponent; on his shield, four-pointed star with checkered border. His companion has as a shield device a rosette elaborately drawn in black and white with a border of rays. Between the warriors, over the fallen man, a bird flying.

On fragment 2 we see the back of one warrior's helmet in black with the point of a spear, and the helmet (in outline) and eye of another warrior, likewise the point of a spear. From a comparison of 5 it seems probable that the spear to the left belongs to the right-hand warrior and the spear at the right to another not preserved. On the right of 1 again we see the trace of another helmet (checkered border) projecting into the pattern above.

On 5 we have three warriors; the one at the left resembles the foremost warrior on the left of 2, except that the border of his shield is a ray pattern, and the helmet has no border; he is armed with a spear. The warrior in the centre differs from the others in having a very tall helmet, with a single checkered border, which projects into the upper pattern as in 1; a faint line marks the outline of the head, evidently done in the preliminary drawing. This feature may be observed on almost all the figures. His shield seems to have had a four-leaf rosette for its device, the leaves being left plain and the entire shield covered with yellow; a fainter line encircles the shield inside the rim. He is armed with a spear (since the lower curved line behind him is clearly the continuation of his spear) and a sword. Between his legs a bird similar to the one on 4. Of the right-hand warrior only the head and part of a leg are preserved.

All the figures are bearded, and as the bulk of the face is covered by the helmet a triangular space is formed by the nose and eye. It may be noted that in no two cases is the device of the shields the same. Faint black lines are seen on several of the figures, which in most cases marks the preliminary drawing. On 4 the lines of the legs of four figures cross each other, due, of course, to careless drawing.

Separated from the frieze just described by a narrow border containing a double guilloche (drawn in outline and stippled in black) is the third frieze (1 and 3).

At the left of 1 are the body, hind leg and fore legs of a horse; to right, a broad band around the chest, with the reins along the back. Behind the horse the figure of a man from the waist downwards carrying a shield (in outline; device a rosette) and two spears. Around his waist is a belt with a row of dots. Yellow is used on his body and legs as well as on the body and legs of the horse, with the addition of faint black lines. Before the horse to left a woman, from the waist downward (in outline), holding a staff in her hand and clad in a chiton reaching almost to the ankles, stippled above in black, with three borders, a zigzag, meander, and dots. Behind her the leg and foot of another man, drawn in outline, but evidently wearing a boot. Between the horse's fore legs a water bird and above the reins a flying bird, as in the lower frieze. Incised lines are used to denote the reins. At the back of the horse is a projection to which the reins are fastened, from which goes a diagonal line to the top of the frieze representing a goad or whip.

The arrangement of 3 is somewhat problematical.[1] At the left is the upper part of a female figure (with long hair in ribbed locks) clad in a sort of bodice and a long skirt, stippled with black dots; she is stretching out her right arm. Behind her the figure of a bearded centaur, with a belt around his waist, looking to left, but his body turned to right; the line of the nates and the calf is visible at the lower part of the fragment. He is formed in the Archaic type, the entire figure of a man joined to the body and hind legs of a horse. The horse's body is seen to left and the woman seems to have her left arm around it. The waist of the centaur is pierced by an arrow, and the blood is marked by dark streaks. The attitude of his right hand is uncertain. The eyes of both figures are drawn as dotted circles. In field, flying bird.

Above is the last frieze which forms the base of the vessel proper. Some animal is represented to left, as three legs, body, and neck (ornamented with a scale pattern) are visible, but what the animal is cannot be told. Under its fore leg a row of dots and beneath the body a *swastika*.

[1] For this interpretation I am indebted to Mr. Edward Robinson, Director of the Museum of Fine Arts, Boston.

The chief interest of the vase lies in the two main friezes, but owing to the fragmentary condition of the vase their arrangement is extremely doubtful. It is perfectly plain that the subject of the lower frieze was the combat over some fallen warrior, and if we place 5 below 1, and transfer 2 to a position directly over 4, we shall obtain six warriors on the left and four (or perhaps only two, if 2 forms the head of the two warriors to the right of 4) on the right. How many warriors were represented, or whether the two sides of the base represented different scenes, we cannot say.

Less clear is the arrangement of the upper frieze. We have the figures of a horse, man, two women, and a centaur, and as it is certain that the subject of 3 had no connection with 1, both fragments were probably on opposite sides of the base. That the horse on 1 was harnessed to a chariot seems certain. Although we have only one horse, we know the single teams were common during the Archaic period.[1] As three reins are certainly represented, it is possible that a pair of horses was intended (which would be more appropriate to the period of the vase). If a wagon be supplied, then the object to which the reins are fastened must be the top of the pole. Although it is placed just over the flank, we find it set as far back on the shoulder of a black figure hydria (Gerhard, *Aus. Vas.* pl. 253). It cannot possibly be the ἄντυξ of a chariot, as it is far too close to the body of the horse. That the diagonal line which begins at the end of the pole is a goad held in the driver's hand, a comparison of *Aus. Vas.* pl. 251 shows clearly. Not enough of the scene is preserved to warrant an identification.

With 3 the subject is plain. Deianeira and the centaur Nessos are represented. The round object at the back of the woman's head is probably the sword of Herakles; at least it is precisely similar to the sword on the lower frieze, and on a Chalcidian vase in the Louvre we find Herakles attacking the centaur with a sword (*Aus. Vas.* 117–118, 1). The attitude of the centaur is paralleled by another centaur on the Argive lekythos in Berlin (*Arch. Zeit.* 1883, pl. x.), who, pierced by an arrow, is flying to right while looking back over his shoulder. Deianeira is represented in a rather singular fashion; she seems to be clinging to the centaur's body with one hand while stretching out her right hand as if to call for assistance. Such a treatment of the scene is, as far as I know, unique.

This representation of Herakles's encounter with Nessos (if such it be) seems to be the earliest instance we have where Deianeira is represented (cf. Roscher's *Lex.* II. p. 2194).

Several points in the matter of detail must be noticed. The type of helmet is peculiar; for the simple helmet, that worn by the warrior on the Melian vase (Conze, *Melische Vasen*, pl. iii.), offers the nearest resemblance, but the tall helmet differs from any I have yet seen. The female figure on 3 wears her hair in a ribbed band behind, an extremely common form during the late Argive and Corinthian periods. The treatment of the eye varies in the two principal friezes; in the lower we have a pear-shaped space for the nose in white with the eye as a small dot; in the upper we have the usual type on Melian or Rhodian vases,[2] the dotted circle. The shields are the round form which is found in the Geometric style, but the addition of a device is characteristic of a later period.

In spite of its many peculiarities, I see no reason to doubt that the vase is of Argive fabrication and belongs to the early stage of Class III. of the Argive. Of purely Geometrical motives we find no trace, except the water bird on 1, but all the various motives, the *swastika*, guilloche, birds, etc., can be traced to earlier examples. The arrangement of the figures savors of a Mycenaean prototype, but the animal frieze shows a certain amount of Oriental influence. The application of color is probably, as we have seen, an Argive peculiarity. At the same time the general execution is primitive in its character, in spite of the advanced tendency of the composition, and shows little trace of the technical skill so characteristic of the later Argive vases.

It is of course possible that this may be a foreign product, imported into Argos, and if such were the case we should expect to find analogous vases in other places, which, with one exception, the Aristonothos vase,[3] are not forthcoming. Melian, Rhodian, and Ionian vases which belong to the same period as our vase (perhaps a trifle later) seem to offer some slight resemblance, but it may be easily seen, if their styles be analyzed, that there is no connection between them.

The Aristonothos vase, though treating a different subject from ours, is the only vase which

[1] Cf. the Mycenaean grave stelae and Geometric Vases, Helbig, *Epos*², p. 139, fig. 33.

[2] Also on the Mycenaean 'Warrior' Vase.

[3] *Mon. dell' Inst.* IX. pl. iv.

shows any similarity of style, and has therefore been assigned by Furtwängler to an Argive fabric.[1] It may be bold to use that vase as a criterion, but the view of a scholar like Furtwängler calls for careful attention, and if at Argos we find a vase similar to the Aristonothos vase, which, though exhibiting several new features, shows clearly the elements of the Argive style, there would seem to be good reason for assigning both to an Argive fabric.

We find that on the Aristonothos vase the type of figures, profiles, etc., is identical. The round shields are used with similar devices. Also on many of the figures small white dots are added such as we have seen on the vases just discussed, a strong point in favor of the Argive origin of that vase. We find a rosette precisely similar to that on the shield of our fallen warrior with black and white leaves. Except for the white dots, there is no application of extra color on the Aristonothos vase.

If what we have just said holds good, then our vase must fall at the beginning of the seventh century; later than that it cannot be.

PLATE LX.

19 a–h. Eight fragments from a large vase.[2] The shape is uncertain but it may have been some sort of a pyxis. The diameter was about 28 cm., greenish yellow clay with a dirty brownish yellow slip, decoration in black to dark brown. Incised lines used. Rim ends in a moulding. No trace of glaze on interior.

A pyxis seems the most probable shape, though the addition of a moulding to the rim is unusual.

On **a** we have a bearded man in a chariot to right drawn by a single horse, holding the reins in his left hand and a goad or spear in his right hand. He is clad in a single long garment with a zigzag pattern down the front. The body of the chariot is ornamented with a zigzag border, incised, and the eye of the man is denoted by a dotted circle. The chariot has a single wheel. Behind the man three vertical lines bordering the panel.

On **b** we have a large cauldron and a tripod with double legs, ending at the sides in a wheel on which a horse is perched. Over the tripod is a helmet. Between the cauldron and the tripod some object, perhaps a cleaver. **c** shows portions of two deer (eyes incised) to right, and **d** and **e** show the head and horns of a stag.

On the bottom of the vase (**e–h**) some design was represented, though not enough is left to conjecture what the actual design was. We have already seen this peculiarity on the base of another pyxis (**Fig. 69**).

It seems certain from the presence of the vertical lines on **a** that two scenes were represented, each in a panel; **a** and **b** belong to one side, **c**, **d**, and **e** to the other. **f** is probably the bottom of **b** (showing the continuation of the cauldron), while **g** and **h** belong to the other side, **g** being the lower part of **c**.

It is difficult to say what the principal scene represents. perhaps the most probable explanation is that a chariot race is represented (there is room for two more teams on the vase), and that the cauldron, tripod, and helmet are the prizes. If this is correct, we obtain the year 776 B. C. as a *terminus ante quem*, since before that date the representation of a contest for prizes never occurs on any Greek vase. Only one horse is attached to the chariot, which is similar to that found on Geometric vases with a curved ἄντυξ (cf. Helbig, *Epos*[2], p. 138, fig. 32); but as three reins are represented in the driver's hand, and the head and feet of the horse are missing, the usual number of two was probably represented. The cauldron is similar in shape to the large Dipylon vases, but differs from them as to the handles. The tripod has double legs (contrary to the ones found at Olympia,[3] which have single legs), and seems to belong to a different type, as the legs run clear to the rim of the bowl. The peculiar form of the latter is due entirely to the desire to make room for a helmet (Corinthian type). The tripod has a characteristic quite common in the tripods from Olympia,[4] as well as in other early bronze work, in having rings or, as here, wheels at the sides on

[1] *Berl. Philol. Wochens.* 1895, p. 202. "Nun haben die Ausgrabungen am Heraeon von Argos sowohl Scherben jener von mir der Fabrik der 'Aristonothos-Vase' zu gerechneten Art als auch Protokorinthische zu Tage gebracht." Our fragments are the 'Scherben' referred to.

[2] A fragment (**b**) of this vase has already been published by Laurent, *B. C. H.* 1901, p. 151, fig. 4.

[3] Furtwängler, 'Die Bronzen,' *Olympia*, IV. pp. 72 ff.

[4] *Ibid.*, pl. xxx. 574, 624; xxxiii. 607 and a.

which a horse is perched. What the object to the right of the cauldron represents is difficult to say;[1] from **f** it seems certain that a similar object was placed on the other side, but the size of the vase precludes our considering them as supports.

The animal frieze presents no peculiarity of any kind. The general style of the vase is decidedly that of the early period of the Oriental Argive class. **a** at first sight seems to show the same style of drawing in the case of the male figure as is generally found on Geometric vases; but the style of the horse as well as the presence of the incised lines show that by no possibility can the style be Geometric. It is possible that the artist may have drawn the male figure after some Geometric prototypes. All things considered, there seems no good reason why we should not have here a vase of distinctly Argive fabric.

PLATE LXVI.

Three fragments, **4 a–c**, from the same vase, found east of the Northwest Building. Brick red clay, with a bright yellow slip on exterior, chocolate-brown decoration with free use of incised lines. Form of vase uncertain.

That two friezes of animals were represented is certain. Traces of a lower frieze appear on **a**. On **a** and **b** we have some animal to right, on **b** the wing and body of a seated sphinx, and on **c** the fore part of another animal similar to **a**.

Of all the fragments yielded by the Heraeum these are the most unique and extraordinary. With the exception of an animal on an Early Attic vase (Couve, *B. C. H.* 1893, p. 25, pls. ii. and iii.), which bears an extremely superficial resemblance, I have been unable to find any vase or fragments which offer any analogy whatsoever. The fact that an animal frieze is represented as well as the presence of the sphinx shows that the fragments cannot be earlier than the third class of the Argive style, though, stylistically considered, these animals show none of the particular Argive features.

Certain technical points deserve notice; the drawing is extremely curious, especially at the juncture of the body and fore leg, where a crescent-shaped cut is incised to show the modeling of the leg. An oval space is left for the eye, which is denoted by a dot, and resembles that of a toad; the ears stand upright. The mouth, denoted by a slit, gives a savage expression to the head. We can only guess at the identity of the animals, but that they represent boars seems most probable. It would appear at first sight as if the feet of the animal on **a** were the paws of a carnivorous animal, but since the details of the body are so carefully incised, and as the paws of carnivora during this period are always denoted by incised lines, we must conclude that they are hoofs. The absence of horns shows clearly that they are not cattle, sheep, or goats, so that a boar is the only other animal possible.

Whether we can recognize here a foreign interpretation is impossible to say, but until some analogous example is found elsewhere, it seems most natural to regard it as an Argive product, perhaps a caricature; not a representative of any type, but merely an isolated case of some potter's fancy; in short, a 'freak.' Taking the technique, clay, and style into consideration, we may assign the fragments to the early part of the seventh century.

CHAPTER VI.

THE CORINTHIAN STYLE.

THE relations of the Argive and Corinthian styles to each other were discussed at length in the Introduction and in Chapter IV. In the present chapter only those vases and fragments which belong to the Corinthian style proper will be considered.

The Corinthian style[2] is so thoroughly well known and its origin so firmly established, that any discussion of the various questions which here arise in regard to it is out of

[1] Laurent (*loc. cit.*) identifies this as a sword, which seems doubtful.

[2] For general discussion of the style, v. Wilisch, *Altkorinthische Thonindustrie.*

place. It was fairly well represented at the Heraeum; whole vases were scarce, but the fragments filled nearly half a dozen baskets. Such fragments as are preserved show nothing new; the forms of the vases differ in no way from the usual Corinthian types, and the scheme of decoration is identically the same.

Whether all the Corinthian fragments found at the Heraeum were manufactured at Argos is impossible to say. It has not been proved that the various vases of the style scattered over the Greek world were all made in Corinth,[1] and it is undoubtly true that after the style became thoroughly known its manufacture was carried on in other places than Corinth, just as a great deal of the Mycenaean ware found in Greece must have been manufactured outside of the Argolid. As Corinth lies so near Argos (only thirty miles away), the importation of the style into the latter place would be perfectly possible. At all events, the internal evidence of the Corinthian fragments found at the Heraeum throws no light on the question.

Wilisch has divided the Corinthian style into two classes, the elder and the younger. With the exception of three fragments the elder class only is found at the Heraeum. This may serve to show that the Corinthian vases were manufactured in the Argolid and not imported, since after the Corinthian style very few fragments of any class of vases are found at the Heraeum, while if the reverse were the case, it would be an extremely curious fact to find the importation of a style suddenly ceasing, without any definite reason. There is no literary evidence to show that Argos ever enacted an embargo against the products of Corinth as she did in the case of Athens.

The forms found at the Heraeum are: —

Skyphos,	Aryballos,
Oinochoe,	Amphora,
Pyxis,	Askos,
Sugar Bowl,	Kylix,
Tripod Bowl,	Kothon,
Alabastron,	Plate.

Wilisch's statement (*op. cit.* p. 21) that the skyphos is the only form peculiar to both the Argive and Corinthian styles is certainly incorrect, since several fragments belonging to oinochoai of the type on p. 127 were found with Corinthian decoration,[2] and as we have seen, the Argive style included all the forms in the above list with the exception of the kylix and the tripod bowl. The decoration on all the fragments was distinctly poor, few showing really good technique. Most of them were found on the Second Temple Terrace in the pocket towards the southeast and under the retaining wall of the West Building (southwest corner). The number of bottoms (of skyphoi and oinochoai) far exceeded the fragments which belonged to the upper part of such vases. Though as a rule the clay of the Corinthian vases is rather more grayish in tone than in the Argive, it was impossible in most cases to decide whether such fragments belonged to Argive or Corinthian vases, the decoration in both styles (ray pattern) being identical. Some of these vases, however, showed just enough of the main zone to established their identity as Corinthian.

[1] It is perfectly certain, through the presence of inscriptions, that vases of this style were manufactured in Sikyon (Kretschmer, *Griechische Vaseninschriften*, p. 50; cf. also p. 185, No. 1). Hence Argos may well have made some herself.

[2] The British Museum possesses such an oinochoe (A 1035) with three zones of figures. I noted in the Naples Museum an oinochoe of the Argive style, which had Corinthian decoration over the parallel bands. I was unable to examine the vase, but feel sure that the Corinthian decoration is modern. Cf. *J. H. S.* XI. (1890), p. 175.

In but a few cases could a vase be reconstructed from the fragments, and as the number of whole vases was so small no such classification as was followed in Chapter IV. could be used, nor does the class represented admit of any chronological subdivisions.

OLD CORINTHIAN STYLE.

Skyphos.

This form, being the commonest, will be treated first. Two types may be detected, those having a glaze on the interior and those without. The latter type is represented only by fragments in a very poor condition, and seems to have been confined to small vases. The clay is greenish or gray in tone, the foot projecting in a slight moulding, and the base ornamented with a ray pattern, the rays being very fine and close together. Above the rays, separated by a broad stripe on which narrow stripes of red or white color are applied, is the principal zone. As the type is so common, no examples are given here.

Fragments belonging to the former type, though not so numerous, were in better preservation as far as the figure decoration is concerned. They are generally of a red or yellow clay, the glaze black, though in some cases it has been burnt to a brilliant red, and in others is almost entirely obliterated, owing doubtless to the nature of the soil. The form of the vase is always that of **Fig. 64**, and the only variation is found in the proportion between the height and the diameter. The motives of decoration are the usual ones, zones of animals (lions, panthers, bulls, goats, deer, etc.), birds, fabulous monsters (sirens and sphinxes), and flower patterns (generally lotos). Red color is universally applied to the figures themselves and the bands which border the zone; red stripes are often applied to the interior, just below the rim. Incised lines are almost invariably used, but extremely carelessly, as no attempt has been made in many cases to prevent such lines running into the background of the zone. The bases are usually ornamented with rays, and the rim with a border of zigzags, water birds, or flowers, placed over the main zone; in some cases the border is omitted and the main zone extends clear to the rim. Ornaments in field are almost invariably used.

PLATE LXI.

1 a and **b**. Two fragments of a skyphos, of reddish clay, dark red glaze on interior. On main zone sphinx and siren to right (**a**) and sphinx to left (**b**). Two broad stripes of applied red separate the rim border (vertical zigzags). Red applied to the wings of the figures, and to two stripes below the rim on the interior.

2. Grayish clay, dark glaze on interior almost obliterated. Heads of sphinx and goose to left. Toothed and zigzag border above.

The sphinx is almost the commonest motive on our fragments. Dozens of others were found showing a similar design.

3. Light yellow clay, with brilliant black glaze on interior. Fore part of boar to right. Ray pattern below. Red applied on boar's neck.

This fragment belonged to a large skyphos, probably 15 cm. in height.

4. From a large skyphos, about 20 cm. in height. Grayish clay, glaze and decoration very much faded. Above main zone (two panthers back to back) border of palmette-lotos chain, only visible through the incised lines, as the decoration has almost entirely faded.

5. Yellowish clay, with dark brown glaze. Zigzag border on rim. On main zone, hind part of bull to right. Red applied to bull's belly.

6. Yellow clay, with faded black glaze. On main zone haunch of a goat and tail of another animal. Above palmette-lotos chain. Applied red band below rim on interior; red on the centres of the palmette and on goat's body. Cf. Wilisch, *op. cit.* pl. iii. 36.

7. Reddish clay, with bright red glaze. Panther, full front, and rear part of another animal. Above, zigzag border. The zone is burnt bright red, the rim border black.

As in the case of some of the Argive fragments, the difference in color between the two parts of the vase is strongly marked, and is no doubt intentional.

8. Bright yellow clay, with brilliant black glaze. Rooster to left. Red applied to the wattles, wings and rosettes in field.

9 a and **b**. Two fragments from rim of skyphos. Yellow clay, with dark brown glaze. On principal zone head of sphinx. Above, separated by a checkered border, zone of water birds to right broken by a panel containing a star. Red applied to wings of the bird.

These fragments show an upper zone which in its drawing is similar to that of the Oriental Argive, without any ornaments in field. The lower zone is in the typical Corinthian style.

10. Yellow clay, with brilliant dark brown glaze and bright red decoration. Main zone occupied by a very elaborate palmette-lotos chain in squares, with red color frequently applied. Below, zone of water birds. It is probable that a similar zone formed the upper border. For palmette, cf. Wilisch, *op. cit.* pl. iii. 35.

The fragments here given are paralleled by dozens of others of varying technical skill. Some of the fragments showed the figures of the animals stretched out to an abnormal length.

Oinochoai.

Two types were represented.

1. Tall-necked oinochoe (p. 127).
2. Corinthian type. Wilisch, *op. cit.* pl. ii. 18.

The first type was represented only by a few fragments in bad preservation. These were entirely covered with a black glaze, except for the animal zone on the body, and had on the shoulder an incised tongue pattern, red and yellow being applied to the alternate divisions. Of Type 2 fragments of only one vase were found which permitted a fairly satisfactory reconstruction, and several fragments of others. Curiously enough, no neck belonging to these oinochoai was found, nor is it certain whether some fragments[1] did not belong to another variety of oinochoe (Wilisch, *op. cit.* pl. ii. 16).

11 a–c. Three fragments of an oinochoe. Reddish clay. On base, rays, with three bands (middle band black, the others applied in red, dividing lines in white) separating them from the main zone. Panther to right (head full front) and goat to left. On **b** an owl, to right head full front; on **c**, deer feeding to left and feet of a sphinx. Above, two applied red bands inclosing toothed border. On shoulder, another zone, with lower part of a bird to right. Red is freely applied to all the figures.

A few other unimportant fragments of this vase were found.

12. Dark yellow clay, with decoration varying from black to red. Ram's head to right, dotted circles as ornaments in field. Good technique.

The other fragments were unimportant. They included an owl, panther, goat, etc.

Pyxides.

Very few fragments belonging to this form were found, but the covers were much more numerous, showing the same discrepancy of proportion already mentioned in the case of the Argive fragments (p. 136).

Two types were represented.

1. Pyxis with curving sides (*Berl. Cat.* v. 103).
2. Pyxis with straight sides (*Berl. Cat.* v. 101).

[1] Two fragments of yellow clay with an animal zone on the body and another on the shoulder were found, which, judging from the curve, may have belonged to this form.

The few fragments belonging to Type 1 followed the same scheme of decoration, ray pattern on the base and a sort of tongue pattern incised on the body, red and yellow color being applied to the alternate divisions. The interior was not glazed in every case.

2.

13. Reddish yellow clay, with bright red glaze on interior. On main zone, procession of women to right. Two other fragments were found, one showing the women facing to left so that two processions were represented. This fragment differs slightly from the usual form in that the base does not rest flat on the ground, but the sides are continued down lower than the base, so that the vase rests on a low foot.

Of the other fragments, three belonged to a pyxis of greenish gray clay, adorned with the usual animal zone (lion, bull, boar, and goat). Another showed a palmette-lotos chain as the main zone, very hastily done.

Covers.

A very large number of these, mostly in fragments, was found. Only one type could be distinguished, that with a flange fitting inside the rim of the pyxis (v. p. 139, fig. 73).

In only a few cases was the knob preserved, and in those it was conical or flat in shape. The commonest type (at least thirty covers were represented) had a ray pattern or leaf rosette in the centre, and a zone of animals of the usual type as a border on the rim. Almost equally common was the tongue pattern with red lobes. A few fragments showed a procession of warriors armed with round shields and spears.

14. Diameter, 0.106 m. Greenish clay. In centre leaf rosette, outside animal zone, four lions, two boars, stag, and duck. Decoration very much faded, with frequent traces of applied red color. This was the only cover preserved almost intact. Its wealth of decoration suggests the "Dodwell" vase.

15. Fragment of cover. Original diameter, 0.155 m. Very fine bright yellow clay, with black decoration, red color freely applied. In centre, ray pattern. Main zone bounded by two bands applied in red. Bird, male figure, sphinx, and two lions in an heraldic scheme.

The bearded figure on the left is dressed in a long chiton with a border down the front, and a long himation which falls in a fold at the right. The arms are not visible, but may perhaps be denoted by the incised lines starting from the shoulders. The figure presents this peculiarity, that while the himation is filled in with red, the skirt of the chiton is drawn in outline. This peculiarity, as far as I know, does not occur on vases of the Old Corinthian style.[1]

The identity of the bird is doubtful; it resembles a crow more than any other bird. The sphinx shows no new features.

The group of the two lions is the most interesting. Though the heraldic scheme was no new feature in Greek art during the earlier periods (e. g. the Lion Gate at Mycenae, Geometric vases, etc.), it is not until the use of the Corinthian style that the scheme is generally used. The attitude of our lions is paralleled by two bronze reliefs, one from the Acropolis (Bather, *J. H. S.* XIII. [1892–93], p. 256, fig. 25) and the other in Athens (Furtwängler, *Ann. dell' Inst.* 1880, p. 135, tav. d' agg. H), and by a terra-cotta relief from the Heraeum. In the latter the lions are standing, not sitting. Analogous is the relief in Curtius (*Wappengebrauch und Wappenstil im Alterthum*, pl. i. 11). Except for Chalcidian vases (v. *Ann.* 1880, p. 135, note 2) I have been able to discover this motive on but one other example of Archaic vases (*B. C. H.* XIX. [1895], p. 76, fig. 4).

From the various analogies mentioned, it is certain that our fragment cannot be older than the bronze reliefs, i. e. the end of the seventh century. The fineness of the clay, style of drawing, and lack of ornaments in field is consistent with this view, and shows that the fragment, if not belonging to the New Corinthian style, belongs at least to the transitional period between the Old and the New Corinthian styles.

[1] Cf. Wilisch, *op. cit.* p. 99.

Sugar-Bowl Form.

Two types of these bowls were represented.

1. Without handles (Wilisch, *op. cit.* pl. i. 10).
2. With handles in plastic form (*Ibid.* pl. i. 13).

As no fragments were found with handles, it is uncertain whether a third type (Wilisch, *op. cit.* pl. i. 11 and 12) was represented.

All the fragments show a zone of figures; the interior is always unglazed. The base is invariably ornamented with a ray pattern.

1.

16 a and **b**. Two fragments from same bowl; original height about 12 cm. Greenish yellow clay, decoration very much faded. On base, rays; above, main zone, bounded on each side by two dotted rows. Procession of women to left; the right-hand figure holds a pomegranate in her hand. Dots as ornaments in field. Rim ends in a moulding.

On **b** the skirt of one woman's dress is drawn in a triangular outline. Judging by the extremely primitive character of the drawing, we have here one of the earliest examples of the style.

17. Fragment of bowl; original height about 15 cm. Yellow clay, with black decoration, red freely applied to the figures. On main zone, two sphinxes. Dotted bands above.

18. Fragment of base. Reddish brown clay, with black decoration burnt red. On base, rays; above, animal zone with lower part of a sphinx and leg of a panther showing.

It is not absolutely certain that this fragment belongs to a bowl; the curve would suit an oinochoe equally well.

None of the other fragments possessed any interest except one very small fragment on which traces of a row of warriors armed with shields, helmets, and spears could be seen.

2.

The presence of this type is established only by a dozen fragments representing, with one exception, a plastic female head.

19. Fragment of bowl. Plastic female head; light yellowish brown clay, with brown decoration. Red bands applied to the surface of the vase. The hair is arranged on either side of the head in three strands.

Examples of this type are fairly numerous. Cf. Furtwängler, *Sammlung Sabouroff*, pl. xlvii. 1; Wilisch, *op. cit.* p. 22, note 82.

20. Plastic head of a sheep. Similar technique to **19**.

Tripod Bowls. (Form, *Berl. Cat.* v. 198.)

Though this form can hardly be called a very characteristic one of the Corinthian style, it is by no means rare. Wilisch ignores it entirely. The number of fragments of this type found at the Heraeum was not very numerous; of these the majority were legs, with fragments of the bowl itself still attached. Whether these bowls possessed covers originally is impossible to say; a bowl in Berlin (No. 1153) has none, nor were any covers which clearly belonged to these bowls found at the Heraeum.

Except for difference in the proportion of the depth of the bowl and the height of the legs, no separation into classes is possible, and all the fragments follow one type.

21. Fragment of bowl. Height, 0.05 m.; original diameter, 0.127 m. Yellow clay. The rim is ribbed on its outer and upper sides. Interior covered with a dark brown glaze, extending over the rim, with two concentric circles uncolored, with a narrow stripe of red applied between them.

On exterior, zone of animals, very much faded, on body, and a single animal (lion) on each leg. Another fragment of a leg was found.

The other fragments of the type all followed the same scheme of decoration, a zone of animals on the body and single figures (panthers, lions, sphinxes, birds, etc.) on the legs. One leg showed a palmette-lotos pattern in place of a figure.

Alabastra.

Two types may be distinguished.

1. With a slight moulding on the base, allowing the vase to stand upright (Wilisch, *op. cit.* ii. 15).
2. With round base (*Berl. Cat.* v. 109).

1.

Only a few scattered fragments of this type were found. The moulding is placed directly in the centre of the base, with a leaf rosette radiating from it, and the body of the vase ornamented with one or two zones of animals, in the usual style.

2.

Fragments of the second type were fairly numerous, especially the rims. Very few vases were preserved whole and no vase could be reconstructed from the fragments.

Fig. 95. Height, 0.072 m. Intact save for small fragment of rim. On rim, leaf rosette, with dots at the side. On neck, leaf rosette, alternate leaves applied in red. On body, three gryphons. On base, leaf rosette. Red color freely applied on their bodies. Rosettes as ornaments in field.



FIG. 95.

None of the other vases were in as good condition. They show the usual figures, lions, panthers, geese, etc., One fragment showed three gorgoneia around the base, while another had the lower part of a female figure.

Amphora.

The neck and handle of an amphora similar to Wilisch, *op. cit.* II. 21, was found, with traces of Corinthian decoration, very much faded.

Aryballoi. (Wilisch, *op. cit.* ii. 14.)

Only one type of aryballos could be detected. Curiously enough, in spite of the shape of the aryballos, which is well calculated to withstand the pressure of the earth in which it is buried, not a single specimen was recovered intact. Fragments were numerous, especially rims, but none of them showed any interesting features.[1] They were usually of a gray or greenish clay, though some fragments of red or yellow clay were found. The decoration is the usual type, a leaf rosette on the base with some figure or other on the body and a leaf rosette or tongue pattern on the rim. Half a dozen fragments showed a wheel pattern with curving spokes on the base. The technique in almost all cases was extremely indifferent.

Askos. (Wilisch, *op. cit.* ii. 22.)

Only one vase of this type was found, very nearly whole. Height, 0.13 m. Wheel

[1] The only fragment which possessed any remarkable decoration bore a Sikyonian vase-inscription: see below, Inscriptions on Vases, p. 185, No. 1.

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Two types of these bowls were represented.

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On **b** the skirt of one woman's dress is drawn in a triangular outline. Judging by the extremely primitive character of the drawing, we have here one of the earliest examples of the style.

17. Fragment of bowl; original height about 15 cm. Yellow clay, with black decoration, red freely applied to the figures. On main zone, two sphinxes. Dotted bands above.

18. Fragment of base. Reddish brown clay, with black decoration burnt red. On base, rays: above, animal zone with lower part of a sphinx and leg of a panther showing.

It is not absolutely certain that this fragment belongs to a bowl; the curve would suit an oinochoe equally well.

None of the other fragments possessed any interest except one very small fragment on which traces of a row of warriors armed with shields, helmets, and spears could be seen.

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On exterior, zone of animals, very much faded, on body, and a single animal (lion) on each leg. Another fragment of a leg was found.

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Alabastra.

Two types may be distinguished.

1. With a slight moulding on the base, allowing the vase to stand upright (Wilisch, *op. cit.* ii. 15).
2. With round base (*Berl. Cat.* v. 109).

1.

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Only one vase of this type was found, very nearly whole. Height, 0.13 m. Wheel

[1] The only fragment which possessed any remarkable decoration bore a Sikyonian vase-inscription: see below, Inscriptions on Vases, p. 185, No. 1.

pattern on base,[1] zone of female figures in procession to right (red applied to the dresses), and dotted bands on the shoulder. The execution was hasty.

Kylikes. (Wilisch, *op. cit.* ii. 19.)

Of this type, one vase was found represented by two fragments. The clay was yellow, the interior covered with a dark brown glaze, to which three stripes of red were applied. On the exterior a zone of figures was represented, of which only an owl could be recognized. The rim flared sharply outwards, in a fashion slightly more marked than the type given by Wilisch.

Plates.

Fragments of plates were not very numerous. The general type is that of p. 142 with a flat base, sides curving outwards and a moulding on the base. The profile of each plate was different, no two being found alike. Most of the fragments belonged to the sides, hardly more than half a dozen fragments from the centres of these plates being found. The principal decoration is confined to the interior, the exterior being usually ornamented with the system of parallel bands as in the Argive style.

22. (**Fig. 96.**) Fragment of plate. Original diameter, 19 cm. Brick red clay with black decoration. In rim, two holes.



FIG. 96.

Exterior. On side, rays. The entire centre seems to have been occupied by a single figure, a sphinx and siren, of which only the tip of the wing is visible.

Interior. On side, zone of animals, sphinxes, and a siren or bird with very long tail. In centre, two sphinxes facing each other. Red applied freely to the bodies and wings of the figures.

This was the only fragment which showed animal decoration on both sides.

23. Fragment of plate. Original diameter, 32 cm. Light red clay, with sharp profile. On interior, palmette-lotos chain, red frequently applied. On exterior, bands. Two other fragments of the rim were found, one pierced by two holes. No trace of the central decoration was found, nor could ~~not~~ be identified on any fragment. A bronze plate with similar ornamentation on the rim was also found.



FIG. 97.

NEW CORINTHIAN STYLE.

23 a and **b.** Two fragments from the same vase (*amphora à colonnette* or stamnos). Brownish clay, covered with a light brown slip, polished. Above, main zone, tongue pattern, with alternate red and yellow divisions applied.

On **a** warrior to right armed with helmet, greaves, shield, and two spears. Below the shield A⊦ Behind him head of a horse. Red (faded to a paler tint) applied on the horse's neck and on the warrior's helmet, shield, and greaves.

b. Foot race. Two men, nude (heads wanting), running to right. Below, traces of a second zone, probably of animals. Under the handle the tip of a wing.

A third fragment was found, representing a goat to left, which may possibly have belonged to the lower zone.

The shape of the vase cannot be determined with any certainty, as not enough of the handle is preserved. The curve of the fragments would suit a stamnos as well as an amphora. It seems probable that the main zone represented a warrior's departure or combat on the obverse and an athletic scene on the reverse, with a zone of animals below. Sphinxes or sirens were perhaps placed below the handles as ornaments to separate the two scenes. The letters of the inscription

[1] Exactly similar to that on the Timonidas jug, *Arch. Zeit.* 1863, pl. clxxv. 5.

suggest A ⋿ [FAM] (ΑἴFας) or A⋿ [MBAM](Αἰνέας). The technique of the fragments marks the latest and most advanced type of the Corinthian style.

The figure is paralleled by a Corinthian skyphos representing the combat between Ajax and Aeneas (*Ann. dell. Inst.* 1862, tav. d' agg. B), except that the warrior on our fragment is not fighting and that only one horse is represented. The warrior's squire was evidently mounted on the horse as in the skyphos.

FOREIGN TYPES.

EARLY ATTIC.

A few fragments were found which bear a close similarity to the Early Attic style; in fact, they show more of the elements of the Early Attic technique than of the Argive. Whether they were actually imported from Attica cannot be said.

PLATE LXII.

1 a and **b.** Two fragments of a large bowl, exact shape uncertain. Coarse reddish clay, with brown glaze on interior, brown decoration faded. On rim, a palmette chain, with a row of pothooks below.

The clay seems remarkably like that of the Early Attic vases, and the palmette chain is very similar to the palmettes on the Early Attic vases in Athens (*Jahrb.* II. [1887], pls. ii. and iii.).

2. Fragment from the handle of a large vase, probably an *amphora à colonnette.* Coarse red, dish clay, exterior covered with a whitish slip, decoration in dark red.

This fragment shows all the technical characteristics of Early Attic ware very plainly.

None of the other fragments were worth reproducing.

CYRENEAN.

Not more than fifty fragments or so of this ware were found, nor is it certain that they were imported from Cyrene. In the opinion of Professor Ernest Gardner, who examined them carefully, the quality of execution was almost too poor for genuine Cyrenean work. On this account he was disposed to regard them as an Argive imitation. That these fragments are distinctly Cyrenean in style is evident, but it is equally true that they are greatly inferior to the vases which represent the style elsewhere.

That Mr. Gardner's view of them is correct seems to me most probable. We have found all along that foreign importations were extremely scarce at the Heraeum,[1] and that the great mass of vases was made on the spot. There is nothing to forbid the presence at Argos of Cyrenean ware, which is the only ware in Greece during the latter part of the sixth century that seems to have contested the field with Athens. At the same time we know that all Attic vases were excluded from Argos during the latter part of the sixth century, and not enough of this Cyrenean ware is found to make up for the lack of black and red figure vases.

The kylix was the only form represented, and seemed to fall into two types.

1. Attic type (*Arch. Zeit.* 1881, pl. xii. 2a).
2. Rim and shoulder sharply separated (*ibid.* pl. xii. 4).

It was not possible in every case to identify the form from which the fragment came.

The clay corresponds in every respect with other Cyrenean vases, and the decoration follows the same scheme. The interior has a design in a circle, on an *exergue.* Red is frequently applied to various details. The exterior as a rule is given up to the usual sequence of Cyrenean motives, rays, tongue pattern, and pomegranate chain; a few fragments showed traces of a figure zone on the exterior.

[1] Except the Corinthian style, and that, we have seen, might possibly have been manufactured in the Argolid and not imported.

The execution is certainly inferior to the ordinary vases of the style. Not enough figures are preserved to judge accurately on this point, but in the ornamental motives there appears a certain lack of firmness and crispness in the drawing.

3. Fragment of kylix, Type 2. White slip, palmette and pomegranate border. Below, zigzag pattern and rays. Cf. *Arch. Zeit.* 1881, pl. x. 3; *Naukratis*, I. pl. ix.

4. Fragment of kylix. Glaze on exterior. Interior covered with a white slip. Eagle with snake in its beak. Decoration faded.

5 a and **b**. Two fragments of kylix, white slip on both sides. On exterior, pomegranate border; on interior, warrior to left with helmet and spear mounted on horseback, the neck of the horse showing to left. On **b**, part of hind leg of horse.

6. Fragment of kylix. On exterior, tongue pattern and rays. On interior, two feet of a woman (probably) on some object, perhaps a foot stove (cf. *B. C. H.* XVII. 1893, p. 236, fig. 4). On the left, part of a scroll.

The other fragments possessed little interest. A few showed portions of the central pictures, a bird, horn of a goat, legs of some animal, palmette, etc. The larger part of the fragments possessed only the usual Cyrenean motives on the exterior.

CHAPTER VII.

BLACK- AND RED-FIGURE STYLES.

Fragments of the Black- and Red-figure styles were represented at the Heraeum in extremely small quantities — not more than a basketful of the former and hardly more than fifty of the latter. Considering the extreme popularity of this ware during the latter part of the sixth century throughout the whole of the Greek world, the explanation of its absence presents one of the most interesting problems afforded by the Heraeum. That the fragments of these two styles found at the Heraeum are of Attic manufacture there can be no question. We have seen already that vases of foreign workmanship were extremely scarce at the Heraeum, but no certain explanation of this deficiency was to be found; in the case of the Attic vases, however, the explanation of their absence at Argos is perfectly satisfactory and agrees with the historical evidence at our command.

When, after the reforms of Kleisthenes, the rise in power of the Athenians had driven back her envious neighbors, Thebes and Chalkis, the former turned to the Aeginetans for assistance, who gladly gave it on account of an ancient feud with the Athenians.[1] The origin of this feud was as follows: —

Once, in early times, the land of Epidauros suffered through a failure of the crops;[2] to bring relief, the Delphic oracle ordered the Epidaurians to erect statues of Damia and Auxesia,[3] not in bronze or stone, but of cultivated olivewood. For this material they applied to Athens, ostensibly because there existed no olive-trees in Greece outside of Attica, and the request was granted by the Athenians on condition that an annual tribute to Athena Polias and Erechtheus should be paid. This condition was scrupulously carried out so long as the Epidaurians retained possession of the holy statues. But Aegina, a colony of Epidauros, grown overbearing through her rapidly increasing sea-power, asserted her independence, and during the course of an incursion into Epidauros carried away the statues and set them up at Oia, twenty stadia from the capital, where a cult to the two goddesses was inaugurated. The Epidaurians then refused to pay their annual tribute

[1] Herodot. V. 81 ff.
[2] *Ibid.* V. 82 ff.
[3] Paus. II. 30, 4; cf. Roscher's *Lex.* I. p. 738.

to Athens, and the latter endeavored to obtain the statues from Aegina, but, failing to persuade the Aeginetans to give them up, sent an expedition consisting of one trireme (according to the Athenian tradition) or (according to the Aeginetan tradition, which is more probable) of a whole fleet. While the Athenians were unsuccessfully endeavoring to remove the statues, they were attacked and completely destroyed, with the exception of one man, by the Argives, whom the Aeginetans had called to their aid. This survivor, on his return to Athens, was attacked by the wives of his slain comrades and stabbed to death by their brooches. The use of the brooch was then forbidden in Athens, and hence the introduction of the Ionic chiton came about. The Argives and the Aeginetans made it a custom that women should dedicate brooches in preference to other offerings in the temples of their goddesses and also passed a law "Ἀττικὸν δὲ μήτε τι ἄλλο προσφέρειν πρὸς τὸ ἱρὸν μήτε κέραμον, ἀλλ' ἐκ χυτρίδων ἐπιχοριέων νόμον τὸ λοιπὸν αὐτόθι εἶναι πίνειν"[1] ("that nothing of Attic manufacture should be dedicated in the temples, not even vases, but that they [the Argives and the Aeginetans] should in future drink from vessels made from the clay of the country").

In spite of the legendary character of this tale, there seems no valid reason for rejecting it. Herodotus does not mention the date, but Studniczka[2] has shown that the expedition referred to must have taken place between 570 and 550 B. C., since Athens could hardly have undertaken such an expedition before the increase of her naval power under Solon and Peisistratos; nor would the expedition be likely during Peisistratos's third period of power (*circa* 540 B. C.), as his wife then was an Argive. Also the history of Argos shows that she was at war with Sparta from 585 to 570 B. C., and with Sikyon from 549 onwards.[3]

Now a survey of Attic vase painting shows that the black-figure style did not come to its full development earlier than 550 B. C., and the period before that date is represented by such potters as Nikosthenes and the 'Lesser Masters' group. The red-figure style was not introduced until some twenty years later, and its finest work falls in the period between the end of the sixth century and the Persian wars. An examination of the black- and red-figure fragments at the Heraeum reveals the following facts: that of the scanty number of black-figure fragments barely a dozen belong to the better period (i. e. after 550 B. C.), while of the red-figure fragments, which are earlier than the Persian wars, hardly more than half a dozen were found.[4] Here at Argos, then, we have a period of seventy years, represented by hardly twenty fragments of the most popular styles throughout the Greek world. That the cause of this is the embargo passed by the Argives against Athenian products in the sixth century becomes a fact too plain to be doubted, and shows that the date assigned is the true one.

Thus Argos puts herself on record with perhaps the first recorded case of an absolutely prohibitory tariff or embargo. That the act was a case of pure spite and not due to any desire to protect 'home industries' is plain, since no increased activity on the part of the Argive potters is the result. The presence of the few fragments mentioned does not affect the truth of the statement, for if we consider the enormous amount of vases of these two styles exported from Athens, it may be seen that no tariff measure could be so completely effective as to prevent a single Attic vase from entering the Argolid, and as the absence of this ware at Argos must have some explanation, it would be difficult to find a neater one than the passage just quoted from Herodotus.

[1] Herod. V. 88. The same statement is found in Athenaeus, Deipn. XI. 502 c. This passage has been commented upon by me in the *Class. Rev.* 1896, p. 88.
[2] *Beiträge zur Geschichte der altgriechischen Tracht*, p. 4.
[3] Curtius, *Griechische Geschichte*[5], I. p. 368.
[4] Mr. Stais informs me that very few fragments of either style were found by him at Aegina.

If, then, we have for seventy years an absolute lack of Attic ware at the Heraeum, the question arises, "What took its place?" since it is hardly conceivable that no vases should have been manufactured at the Heraeum. Three suggestions are possible: —

1. The early style (Argive) may have continued. This is unlikely, as it was contrary to Greek taste in the developed periods of art to use old-fashioned types.[1]

2. Some other foreign type was imported to take the place of Attic vases. No such type was found.

3. Some local type must have been used. This is the most natural explanation, but it cannot be affirmed with certainty that this type has been found.

A large number of fragments of a certain type of vases (four basketsful) was found, which type, as far as I know, is peculiar to the Heraeum. These were of red or yellow clay, covered on both sides with a black glaze, the only decoration consisting of two parallel stripes of applied red on the exterior, just below the rim (most of the fragments belonged to skyphoi), varying in thickness, but never more than 2 mm. broad. So common was this type, and its characteristics so unvarying, that we soon came to the conclusion that a special Argive type was represented. Any chronological classification is impossible, but the following points of difference were observed. Half the number were of coarse clay, with a very dull glaze, while the other half consisted of fragments of a fine red clay, carefully cleaned, with a glaze of extreme brilliancy. At first sight it would appear that the latter were Attic, but a close inspection shows that the clay is not as fine or light as in Attic vases, nor the glaze as even, distinct irregularities being present in the surface of the clay, under the glaze, both to the sight and touch. In Attic vases of the best black- or red-figure periods, the clay is always carefully smoothed before applying the glaze, and such irregularities are not usual.

These seem to be the only fragments which answer the requirements of our third suggestion. The Attic influence is plain, through the fineness of the glaze, and it is probable that the Argive potters borrowed this feature from their Athenian contemporaries. At the same time the application of red stripes is distinctly an Argive feature, and follows a fashion instituted several centuries before.

No vases were found intact, nor could any be restored from the fragments. **Fig. 98** shows an example of this particular style (red clay, width, 0.05 m.; height, 0.052 m.).

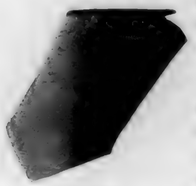


FIG. 98.

BLACK-FIGURE STYLE.

Fragments of the following vases were found: kylix, skyphos, amphora, lekythos, and plate. No vase was recovered intact, nor could any be restored from the fragments, as in hardly any case were more than four or five fragments from the same vase preserved.

Kylikes.

Fragments of the kylix shape were most numerous. Two types were represented

1. With tall foot, deep bowl ('Lesser Masters' shape. *Berl. Cat.* vi. 171).
2. With short foot, shallow bowl (*Berl. Cat.* vi. 172).

Few of the bases were preserved, but it may be seen from the fragments of the rims that Type 1 was the more common. None of the bases found showed any central picture on the interior of the kylix.

[1] It may be urged in reply to this that Athens continued to use the archaic type of coins through the fifth century, but that was due to a special cause.

1.

PLATE LXII. **7.** Fragment of rim. Band of glaze on rim. Panther's head full-front, and back of some other animal.

This would seem to be one of the earliest fragments of the style found at the Heraeum. The panther on the animal zone shows the Corintho-Attic influence.

8. Rim. Same technique. Rider to left clad in a white chiton; behind him a spear or a goad of another figure. Incised lines used on hair, eye, and arm.

This fragment is by all odds the finest bit of black-figure work we found.

9. Warrior, armed with shield, greaves, and corselet. Five white balls on the shield.

This addition of a shield device in white is extremely common in black-figure work. Half a dozen similar fragments were found.

10. Lower part of driver with long white chiton in chariot to right. Behind him rear part of horse to left, white dots on legs.

Other fragments showed figures of men or women in procession, animals, etc. White is always used to mark the flesh color for the female figure and red very frequently for the men. The glazed band is generally separated from the main zone by a slight projection.

2.

Main zone directly along the rim.

11. Head of man to right.

12. Head of horse to right. This fragment in point of drawing is among the best we found.

13. Female head to left; flesh white, incised lines along edge of hair. Red fillet in hair.

14. Satyr to right; ivy vine in field.

Satyrs were found on quite a number of fragments. The drawing in every case was extremely careless.

15. Eye with iris in white, and white circle; in field, ivy vine. To the right of the eye what appears to be a satyr stooping with one hand on the ground. Streak of white marking perhaps a wine skin which the satyr is carrying.

With ivy border along rim.

16. Head of sphinx (part of wing showing) to left, flesh white, red fillet in hair.

Fragments of this description were extremely numerous. Quite a number of fragments were found which showed only a palmette system around the exterior, ornamented at intervals by white or yellow dots.

Skyphoi. (*Berl. Cat.* vi. 190.)

Fragments belonging to this form were not very numerous.

17. Fragment of skyphos. Reddish yellow clay, with black glaze on interior. Herakles and the Nemean lion.

If the interpretation of the scene is correct this fragment is clearly later than 550 B. C., since the type of Herakles strangling the lion without the aid of any weapon is not introduced in vase-painting till after this date (Roscher's *Lex.* I. p. 2197). The form of this vase differs slightly from that of the Berlin type, as the rim is not so sharply defined.

It was very difficult in the case of the other fragments to tell whether they should be considered as belonging to this or the kylix form.

Tripod Bowl.

18. Leg with rim of bowl similar to PLATE LXI. 21. Slight moulding on rim, glazed. Two male heads facing each other and a third head on the left. This was the only fragment of a black-figure bowl of this description.

If, then, we have for seventy years an absolute lack of Attic ware at the Heraeum, the question arises, "What took its place?" since it is hardly conceivable that no vases should have been manufactured at the Heraeum. Three suggestions are possible: —

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Amphora.

19. Foot and leg to left. The style of the drawing suggests a Panathenaic amphora.

Fragments of amphoras were extremely scarce. Some half a dozen belonged to the rims of large amphoras and showed the usual lotos chain on the flat surface of the rim. One fragment of the side showed the lower part of three seated figures. Several bases and a few fragments of amphora covers were found, the latter showing a ray pattern in the centre and an animal zone around it.

Lekythos.

20. Side of lekythos; horse and rider to right.

Fragments of lekythoi were quite common. Such as had any decoration showed a remarkable lack of finish. **20** is the best specimen. Horses, single, double, or in a quadriga, formed the usual subjects.

Plate.

21. Fragment of plate, exterior glazed. On interior, heads of Dionysos and satyr, red applied on the hair and beard of each. Above Dionysos's head, ivy leaves.

22. Same. Head of cock.

The exact form of these plates cannot be determined, as it is impossible to tell whether they were provided with a foot. No other fragments were found.

We also found a fragment of a phiale precisely similar to one in Syracuse (*Not. d. Scav.* 1893, p. 479) and a fragment of a patera. The latter had no decoration except a tongue pattern (red and black lobes) on the flat surface of the rim.

POLYCHROME WARE.

Only four fragments of this ware were found.

23. Fragment of kylix. Black glaze on exterior; interior covered with a white slip on which is the arm of a figure in black and the corner of a garment (?) in red. Below, what seems to be a spear.

24. Base of alabastron, white ground. Border of rays, points downward, and the feet of a figure in black.

Two other very small fragments were also found. These had a white ground on which was the haunch of some animal with red dots on the leg. One fragment showed a human hand over the animal's body. Judging by the style, the last two fragments belong to the early part of the black-figure period.

The following fragments are selected from a dozen similar ones. Their identification is difficult, but it seems most probable, owing to the presence of the applied stripe in red, that they belong to the class just mentioned p. 176), which may possibly have taken the place of Attic products at the Heraeum. The technique in all is the same; light red clay, covered on both sides with a black glaze, to which the decoration is applied in white and red. A few fragments from Naukratis in the British Museum show a similar use of white, but the motives are different, nor are the red stripes employed.

25. Fragment of kylix. On rim, red stripe; flower pattern in white laid sideways.

26. The same. Two bands of flower pattern were evidently represented. Below, two red stripes.

27 Central part of kylix. Lotos pattern in white.

RED-FIGURE STYLE.

It is difficult to make any selection of the red-figure fragments. Less types are represented than in the black-figure style, and, furthermore, such as we have are, with one exception, of little importance. As far as can be told from the various bases and handles preserved, three shapes were represented, — kylix, amphora, and skyphos. Exactly six fragments of the first period of the severe style were found, of which five are here represented. Of a rhyton, representing the head of a satyr probably, the eye, one ear, and part of the beard were also found, but no reconstruction was possible.

SEVERE STYLE.

28. Fragment from rim of kylix. Palmette.

29. Fragment of kylix. Backs of two horses. On the flank of the first, a small wheel ornament, and a band on the shoulder.

30. Fragment of kylix. Female figure, draped, with arm extended. Perhaps an Athena.

31. Form uncertain. Leg of a warrior to right armed with shield, with a frieze border. Glaze badly worn; traces of preliminary drawing.

The fifth fragment of this period is the polychrome kylix (see below). The sixth fragment represented a palmette similar to **28**.

LATER STYLE.

32. Fragment of amphora. Upper part of woman's head to left (maenad probably), with a saccos, holding a thyrsos; above, tongue pattern.

33. Fragment of kylix or skyphos. Boy holding torch to right.

34. Fragment of amphora. Man in mantle with staff, facing another figure (probably a woman) clad in chiton and himation.

The other fragments showed the upper part of a youth wrapped in a mantle, very poorly drawn; two hoofs of a horse clear of the ground, probably represented as galloping; parts of garments of several figures, and various bits of palmettes, tongue patterns, etc.

POLYCHROME WARE.

PLATE LXVIII. Two fragments[1] of a kylix (form, *Berl. Cat.* vi. 224). Exterior entirely covered with a black glaze, fairly brilliant. The original form seems to have been the squat-footed type with a thick base, characteristic of the smaller kylikes with no decoration on the exterior.

The entire interior is covered with a whitish yellow slip slightly reddish in places. The central picture, bounded by a plain circle, represents a group on an exergue, a nude satyr (upper part of head missing) leaning on some object, probably a rock. He has a horse's tail and long shaggy beard; his chest and abdomen down to the pubes are thickly covered with hair. Faint red lines are used for the muscles of the stomach and the knee cap. On **b** a foot projecting from a garment to right upon an exergue. In the field of **a**, inside the circle, Ε Λ (*ἔγ[ραφσεν]*?).

The subject of the composition is not quite clear. We have a group of two figures, a satyr and another figure, which may be male or female; the circle is too small for a third figure. Three interpretations are possible, — Satyr and Dionysos, Marsyas and Athena (Roscher's *Lex.* II. p. 2446), Satyr and Maenad. The first is possible, but unlikely, as Dionysos is generally represented with an attendant satyr on each side. The second is extremely doubtful, for the object in the centre rather speaks against it, at least if we imagine such a scene conceived in the spirit of the Berlin lekythos (Baum. *Denk.* p. 1001, fig. 1209). The last interpretation is the most likely, though how the group was represented is impossible to say.

The loss of the larger part of the subject is irritating enough, but the mutilated inscription is still more perplexing. That *ἔγραφσεν* was written, and that the artist's name followed the verb seems most probable, but what the name was cannot be conjectured on such slight indications.

If, as is possible, the vase is by some well-known artist, more can be gained through the stylistic features. The class of polychrome vases known to us at present is not very large. Hartwig[2] enu-

[1] Another fragment with part of the handle was found which had no decoration except the white slip.

[2] *Meisterschalen*, p. 490, note 1.

merates twenty-five, and there are two in the Louvre;[1] the number is increased to twenty-eight by our vase. The attitude of the satyr on a polychrome kylix from Ruvo[2] with Ἀλκιβιάδης καλός is very similar to that of the satyr here, but our vase cannot be restored so as to resemble the former, since no room exists on our fragment for the satyr to hold anything in his hand, much less a kantharos. The style of the Ruvo kylix is certainly later than ours, which resembles more the Naukratis fragments in the British Museum.[3] I cannot go so far as to assign these fragments to Euphronios, as they hardly seem to me good enough, but I think on the whole that they show his style more than that of any other artist and are certainly contemporaneous with his later period. We may conclude that the vase is painted in the Euphronian style (perhaps by one of his pupils), probably about 485–480 B. C.

Practically the history of the vase fragments found at the Heraeum ends here, for the number of vases of any kind of a later date than the Persian wars found on the site are so scarce as to have little value. A few scattered fragments of Megarean ware, Roman lamps and a Byzantine cup, are all that represent a period of six centuries.

It seems probable, then, that the embargo instituted by Argos against Attic vases was either never removed, or else that the Argive potters abandoned vase-making entirely. We know that for at least a century almost no vases of any kind were made in Greece outside of Athens; the Attic ware was undoubtedly cheaper and more popular than that made by local potters. At Argos fragments of a later date are so few that there seems no reason for supposing the embargo was removed, and it is hardly possible to suppose that the manufacture of the black glazed fragments mentioned above continued steadily on. For a time, perhaps, that ware may have been a satisfactory substitute, but it is hardly credible that the Argives should always have been contented with it. We must suppose, therefore, that somewhere about the beginning of the fifth century the activity of Argos as an industrial centre for vase-making ceased entirely, and there being no foreign importations to serve as a substitute, the custom of dedicating vases at the Heraeum fell into abeyance. It is also possible to suppose that this custom had declined in the rest of Greece, for with the exception of the Kabirion at Thebes, vases of a later date than the fifth century are not found on any temple sites. From that time onwards vases are only found in graves.

CHAPTER VIII.

VASES IN RELIEF AND LATER VASES.

Although the vases in relief represent two widely different periods, it has seemed best to include them under one chapter. Two different styles are represented, — the Red-ware vases and the so-called Megarean vases. The latter are practically the only vase fragments of any kind found at the Heraeum which are undoubtedly later than the fifth century.

RED WARE.

Almost all the fragments belonging to this style are given on Plate LXIII. They

[1] *Monuments et Mémoires* (Fondation Eugène Piot), 1895, pls. v. and vi.

[2] *Ann. dell' Inst.* 1877, tav. d' agg. Q (No. 19 in Hartwig's list).

[3] Hartwig, *op. cit.* pl. li.

[4] The date, provenience, and use of this ware has always been a vexed problem, and only two facts may be regarded as certain — that it is Greek, not Etruscan, in its origin, and is directly influenced by metal work (Loeschcke, *Arch. Zeit.* 1881, p. 44). As there is little general resemblance of style in the case of all the fragments from various places, it is probable that each town had its local style, and that no one town was the manufacturer of all. None of the fragments of this ware found at the Heraeum or elsewhere can be older than the seventh century.

are not very numerous, and seem to play a minor part in the Argolid, since outside of the Heraeum very little ware of this nature was found at Mycenae[1] or Tiryns.[2]

Pottier has analyzed all the existing material up to 1886 (*B. C. H.* 1888, p. 491). Since that date the most important additions have been published by Dümmler (*Athen. Mitt.* 1896, p. 229, pl. vi.) and De Ridder (*B. C. H.* XXII. [1898], pp. 439 ff., pp. 497 ff., pls. iv.–vi. *bis*.

1. Fragment of base of a large pithos. Coarse reddish clay, measuring between 2 and 3 cm. in thickness. On the base, a zone of figures bounded above and below by a moulding on which a herring-bone pattern is incised.

On main zone, Herakles and the centaurs. In the centre, Herakles to right naked and bearded, holding a bow in his left hand, from which he is about to shoot an arrow at a centaur advancing towards him, whose hands, fore legs, and hind leg only are visible. Behind Herakles, another centaur to left armed with a tree branch, head and front of body wanting. A cutting extends along the top of the zone, making the lower part of the relief much slighter.

2. From base of another pithos. Clay and subject identical with **1**. Below the zone, four rows of herring-bones incised.

3. Fragment of pithos similar in clay and subject to **1**. At the right of the fragment the figure of Herakles is repeated. The attitude of the centaur is slightly different from **1**, as his left hand holds the branch of the tree instead of being extended towards Herakles.

If this fragment belongs to the same vase as **1**, which seems probable, it must have formed part of the belly of the vase at its lowest point where it joins the base. Thus it would seem that the original vase possessed certainly two zones of figures, on the base and belly, with perhaps a third on the rim, leaving the body undecorated.

Some interesting technical features present themselves. It may be seen from **3** that the subject was repeated, and consists in its simple form of a man and a centaur. As the figures were stamped from a mould, it seems most probable that the original mould was circular in form and contained only one group; the mould was revolved over the soft clay, encircling the whole circumference, and thus the design was repeated at regular intervals. The fact that no trace of any dividing line between the groups can be seen makes this explanation the only natural one. At the same time the potter might have retouched the groups after stamping and thus secured a little variety in his figures.[3]

That the three fragments are contemporaneous is evident. Both style and execution are more advanced, than in the fragment from Kameiros (Milchhoefer, *Anfänge der Kunst*, fig. 48), but there is absolutely no trace of any Oriental influence on our fragments. Also the centaurs are still treated in the older style — the entire figure of a man combined with the body and hind legs of a horse.[4] Although it cannot be said exactly when the change to the later type took place, it is probable (the Assos reliefs notwithstanding) that the change occurred about the beginning of the sixth century. But it seems probable that Herakles is here represented, though the club and quiver are wanting; this would seem to show an early treatment of the myth.[5] We have already seen archers on the Mycenaean silver vase, but the bow on that vessel does not curve up at the ends as here. The branch held by the centaurs is, as far as I know, unique in its form. We shall not be very far wrong if we assign these fragments to the first half of the seventh century.

4 a–d. Four fragments from a round box, probably of pyxis form. Height, 0.10 m.; diameter, 0.22 m.; thickness, 0.01 m. Fine, cleaned yellow clay, with brown glaze on interior, worn off in patches.

[1] *Myk. Vas.* p. 53.

[2] Schliemann, *Tiryns*, p. 63, fig. 8; p. 64, fig. 9.

[3] This is certain, since the Louvre possesses a fragment identical with the figure of Perseus on the Louvre pithos (De Ridder, *l. c.* p. 457, fig. 7), and shows that while a few minor differences can be detected, the same mould was used for both figures. De Ridder, I think, is wrong in laying so much stress on these differences (p. 458), and denying that the same model was used for both. What differences exist are clearly due to retouching after stamping.

[4] Roscher's *Lex.* II. p. 1076.

[5] *Ibid.* I. p. 2193; II. p. 1046.

On rim, a round moulding decorated with a series of wavy vertical lines, incised. Below, two raised bands. Directly below the moulding the wavy lines end in a series of dull holes. Ornamentation of base precisely similar. On the figure zone itself, above and below, appear traces of a faint band, which were probably originally like those below the rim moulding. The figures of the zone are much worn, in some places almost obliterated. The subject, as far as it can be ascertained, represents a lion hunt by men on horseback and on foot.

a. Fragment of rim. At the left, horse and rider galloping to left. Rider holds reins in one hand and brandishes a spear behind him in the other. Below the horse, some animal, probably a dog. Behind the horse, a bearded man crouching to left, stretching his right hand towards the rider while grasping with his left the mane of a lion who is evidently sitting on his haunches. Below the lion's head is the head of another lion very faintly outlined. At the right of the fragment, a lion walking to right, whose head is grasped by the right hand of another bearded man, crouching on one knee, who holds a spear in his left with which he spears the lion. At the extreme right of the fragment, the outstretched hand of another figure.

b. The same. Two horses with riders galloping to left. The fore part of the left-hand horse and the rear part of the other are wanting. The riders hold whips in their left hands and the reins in their right.

c. The same. Lion's head to right and two crouching bearded figures to left. This group is the duplicate of that on the right of **a**.

d. Fragment of base. Feet of one lion and fore foot of a second to right.

These fragments are by far the finest of the vases in relief we found. As far as can be told from the fragments, we have one scene — two horsemen, crouching man, two lions, and two crouching men, repeated twice. Whether another figure was added is uncertain. At all events, if we assume that these seven figures formed the whole scene, there is room enough on the vase for three separate repetitions of them. This was undoubtedly done by the use of the circular mould (v. No. **3**).

The repetition of the lion's head on **a** is curious. Either the artist endeavored to represent two lions (delineating the fainter one with a knife), or else, more probably, he failed to secure a good impression of the mould on the first trial and therefore repeated it.

The style of the fragment is distinctly Argive and the Oriental influence more marked than in the preceding. At the same time, judging by the lack of ornaments in field, the fragments would fall in the early part of the Oriental Argive style, about the middle of the seventh century. The execution of the figure is better than in **1–3**, but it cannot be said with any certainty what the chronological difference is between them.

The following fragment is of a later date and would seem to belong to the Corinthian period.

5. Fragment of a large vase, perhaps a pithos. Coarse yellowish clay, covered with a brilliant yellow slip.

Between two borders (tongue pattern), zone of animals. On the left, the head of a sphinx and a panther or lion; both to right. In the centre of the fragment, a palmette. At the right, another panther (head full-front) and rear part of another sphinx (wing showing) both to right.

The whole scene is merely a grouping of those animals which the Oriental influence had made popular and which is especially characteristic of the Corinthian style. All the special features, head of panther full-front, sphinx, palmette as ornament in field, etc., are distinctly characteristic of that style. This fragment is the only one of this ware which shows a distinct foreign influence, and may not be due to a local school; we may assign it to the earlier part of the Corinthian period, i. e. towards the end of the seventh century.

6. Neck of vase. Diameter, 0.05 m.; height, 0.054 m. Brick red clay, with palmette-lotos chain stamped upon the neck.

This fragment also would seem to belong to the Corinthian period.

MEGAREAN WARE.

The presence of this ware at the Heraeum furnishes one of the many problems with which we have to deal. Fragments of these vases represented the only vases which fall between the first half of the fifth century and the Roman times. We have already stated that the embargo against Athenian vases probably killed the vase industry at Argos, but why this particular ware, which is quite common in Greece, should be the sole representative of all the other styles peculiar to this period, South Russian, Lower Italian, Arretine, etc., is a question which finds no satisfactory solution.

This particular style is generally attributed to Megara,[1] and belongs to the third and second centuries. The only historical connection between Megara and Argos known to us is that the former joined the Achaean League in 243 B. C.,[2] and the latter some fifteen years later. This date suits our fragments well, and thus it would seem that as the two states were brought together in the end of the third century, importations of Megarean industries took place in Argos. Why Argos should suddenly have imported this ware is hard to say; at any rate, it was the only ware manufactured at this time by a city of Greece proper.

The amount of this ware filled about half a basket. No whole vases were found, and none could be reconstructed. All the fragments show the usual technique — a reddish clay, covered on both sides with a brown or red glaze (sometimes steely black) and adorned with figures in low relief, the execution on the whole being rather poor. The shallow cup without handles is the only form represented and the decoration follows the usual scheme. On the bottom a pattern of leaves,[3] above a zone of figures and below the rim a border composed of a double wave pattern. Ornaments in field, rosettes, etc., are added freely to the figure zone. Some of the fragments showed no figure zone, but were entirely covered with a leaf pattern. What the subjects of the figure zones were cannot be told. Very few of the fragments possessed any interest.

PLATE LXII.

35. Horse and rider to right; below, leaf pattern with rosettes in the spaces between the points of the leaves.

36. Original diameter, 0.128 m.; height, about 0.065 m. Steely black glaze. On base, three concentric circles. Figures very much worn, one group repeated twice. Warrior to right with shield and helmet, stretching his right hand behind him, and a female figure (Victory). In field, a rosette and a tripod (?).

37. Bearded man to right with staff, holding out his right hand to a woman, who holds a vase in her right hand. In field, rosettes, circles, and bird. Below, leaf pattern.

The other fragments showed various figures, bulls' heads, vases (amphoras), etc., etc.

With these fragments the sequence of vases at the Heraeum practically closes, and it is difficult to say whether any pottery of a later date can be detected. I have noted before that a large mass of the rough undecorated pottery might as well be Roman as early work, but the evidence does not seem to be conclusive either way.

About twenty small bottles, usually known as 'Tear Jugs,' without decoration, were found. These were uniformly of a red or grayish clay and differ in no way from the well-known type. Judging from evidence of those found elsewhere, they seem to belong to the second century B. C.

LAMPS.

About twenty of these were found more or less intact, and a small number of fragments. Those belonging to the Greek period have a small spout with a large opening, the handle

[1] Furtwängler, *Samml. Sabouroff*, pls. lxxiii. and lxxiv.; Benndorf, *Griechische und Sicilische Vasenbilder*, pls. lviii.–lx.

[2] Holm, *History of Greece*, IV. p. 260.

[3] *Samml. Sab.* pl. lxxiii.

standing clear of the vase as in a kylix. The Roman lamps are rather squat and heavy, with a small opening and an upright projection for a handle. Several of the lamps through the presence of a cross clearly belonged to the Christian period.

Greek lamps were found only in fragments. Two of the Roman lamps had figure decoration, the rest being ornamented with a large rosette, etc., in the centre.

38. Top of lamp. Diameter, 0.068 m.; length, 0.09 m. Dark red clay, with projection for handle. Youth with spear in his left hand holding bridle of a horse. Wave pattern on rim.

This relief is interesting, since it supports the view already propounded by Furtwängler, that the Doryphorus of Polycleitus was accompanied by a horse, on account of a relief found at Argos (*Athen. Mitt.* III. [1878], p. 287, pl. xiii.). Our lamp presents a striking similarity to the Argos relief, but is probably of a later date, as it cannot be earlier than the Roman period.



FIG. 99.

39. Lamp, spout broken. Height, 0.032 m.; diameter, 0.07 m.; length, 0.083 m. Red clay. Youth to left blowing double pipes, with some uncertain object in field. On rim, circles.

GLASS.

Fragments of glass vases were scarce, and only one vase could be restored. The fragments seem as a rule to represent low bottles of the ordinary type. All fragments were very much corroded, the silvery surface flaking off readily if touched. A few of the fragments showed a ribbed surface.

Fig. 99. Height, 0.145 m. Bottle of usual type. On neck, series of raised bands. At the back of the neck a small projection, which probably did not represent the base of a handle, as a handle does not belong to this type of bottle.

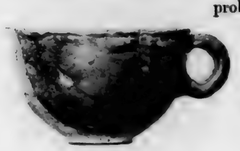


FIG. 100.

None of the fragments were worth reproducing; the majority of them were bases with a low boss in the centre after the fashion of a modern wine bottle.

BYZANTINE.

Fig. 100. Height, 0.05 m.; diameter, 0.09 m. One-handled cup of dark red clay. The entire surface of both exterior and interior has been covered with a shiny iridescent yellow glaze. Under the glaze the surface of the clay is speckled with yellow dots; the handle is divided into two parts.

This vase was the only specimen of Byzantine ware found.

INSCRIPTIONS ON VASES

BY THEODORE WOOLSEY HEERMANCE

I. PAINTED INSCRIPTIONS.

1. (**Fig. 101.**) Neck and handle of an aryballos of Corinthian style (p. 171). Diameter of mouth, 0.054 m. Clay yellow or light buff, with yellow slip. Decoration carefully painted in brown, with some red. The cuts (from drawings by Gilliéron) show respectively top, back, and side views of the fragment. Below the handle a bit of the body of the vase is preserved, and on it appears the wing and tail of a bird, painted in light brown, with incised details. Above the tail is all that remains of the inscription, also in a light brown.



FIG. 101.

The drawing gives no adequate idea of the condition of the surface, and tends to make certain traces of letters appear clearer than they really are, while discolorations of the surface, which confuse the reading, are not indicated. All that is sure are *phi*, and, to the right of *phi*, a Sikyonian *e*-sign. What followed is as uncertain as what preceded, for the paint has largely disappeared, and, in places, the slip as well. Traces of at least three letters are visible, but they are too indistinct to justify any conjectures as to the original reading.

It is to be regretted that the inscription is not complete, for it is older than that on the Berlin *amphora à colonnette*, 1147, and Sikyonian inscriptions on vases are of interest if only for their rarity. Cf. Kretschmer, *Griech. Vaseninschriften*, p. 51, and Πρακτικά, 1899, p. 61 (from Thermon).



FIG. 102.

2. (**Fig. 102.**) Two fragments of a deinos; combined length, 0.117 m. Clay light buff, with dull black glaze inside and out. Inscription painted in a dirty brown immediately below rim.

\------νδρός με ἀν[έθηκε]

The loop of the second letter preserved differs in size and shape from the loop of the third letter; hence the combination -δρ- is preferable to -ρρ-.

3. For Αἰ[ϝας] or Αἰ[νέας] on a fragment of late-Corinthian ware, see above, p. 173.

II. INCISED INSCRIPTIONS.

PLATE LXIX.[1]

1. On flat rim of small bowl. Buff clay, poor brownish glaze.

τᾶς Ϝ[ρας ἠμί]

[1] The inscriptions are reproduced in the actual size of the originals.

standing clear of the vase as in a kylix. The Roman lamps are rather squat and heavy, with a small opening and an upright projection for a handle. Several of the lamps through the presence of a cross clearly belonged to the Christian period.

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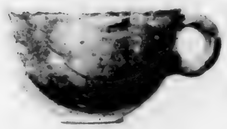


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Fig. 102.

2. (**Fig. 102**.) Two fragments of a deinos; combined length, 0.117 m. Clay light buff, with dull black glaze inside and out. Inscription painted in a dirty brown immediately below rim.

$$-----\nu\delta\rho\acute{o}\varsigma\ \mu\epsilon\ \grave{\alpha}\nu[\acute{\epsilon}\theta\eta\kappa\epsilon]$$

The loop of the second letter preserved differs in size and shape from the loop of the third letter; hence the combination -δρ- is preferable to -ρρ-.

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PLATE LXIX.[1]

1. On flat rim of small bowl. Buff clay, poor brownish glaze.

τᾶς Ϝ[ρας ἠμί]

[1] The inscriptions are reproduced in the actual size of the originals.

2. Red clay, good black glaze. Inscription on inside of vase, close to lip.

[τâς] Ἥρ[ας ἠμί]

The author of the inscription at first omitted ER in BERAΞ; but seeing his mistake before he scratched the next word, changed the A to E and the Ξ to R.

3. Fragment of black-figured ware of reddish clay. Below the inscription are the carelessly drawn head and shoulders of a male figure.

[τâς Ἥρα]ς ἠμί

In front of the *sigma* the second *hasta* of the *alpha* is still visible.

4. Reddish clay, good glaze.

[τâς Ἥρ]ας?

5. Buff clay, poor glaze.

[Ἥρ]α?

For the nominative of the name of the divinity in dedications, cf. *Naukratis*, I. p. 62, No. 447; II. p. 67, Nos. 841–844.

6. Fragment of black-figured ware. Inscription on rim below lip.

[ὁ δεῖνά μ' ἀνέθη]κε τ[ᾷ Ἥρᾳ]

After *tau* part of the *alpha* is preserved.

7. Fragment of black glazed ware, with two red lines 0.02 m. below lip. Inscription immediately under lip, but inverted.

[ὁ δεῖνά με κα]τέδωκ[ε]?

Part of the *alpha* is preserved. With κατέδωκε compare κάθηκε, κάθθηκε, κατέθηκε (*Naukratis*, I. p. 61, No. 185; II. p. 65, Nos. 788–792, 840).

8. On foot of kylix. Brown clay, lustrous black glaze.

[ὁ δεῖνά μ' ἐ]πέδωκε τῷ Μίκῳ

The form ἐπέδωκε is found also in a Boeotian incised inscription, Berlin, 1968. For the name Μίκος (Fick-Bechtel, *Griech. Personennamen*, p. 33) cf. G. Meyer, *Griech. Gram*³. p. 363, note.

The genuineness of this inscription is not beyond suspicion.

9. Buff clay, with brownish black glaze inside and out, and dull red stripe below inscription.

ϙόρωνό[ς μ' ἀνέθηκε]

This is the only occurrence of *koppa* and the only retrograde inscription.

10. Brownish clay; the poor glaze has disappeared with the slip; on interior, parallel with lip, are purple stripes. The inscription encircled neck of vase, just below lip.

– – –]άσων — (or – – –]ασών[δας]) — [μ' ἀνέθηκε]

From one to three letters are missing at the beginning of the name.

11. Fragment of black-figured ware.

Ἀνδρέ[ας μ' ἀνέθηκε]

12. Brown glaze. Inscription just below rim. If it is part of a proper name, there are several possibilities, as: Ἀντάν[ωρ], Ἄνταν[δρος], [Π]αντάν[ωρ], [Π]άνταν[δρος], [Π]αντάν[εμος].

13. Low bowl, which resembles in shape Furtwängler, *Berl. Cat.* vi. 215, restored

from several fragments. One horizontal and one vertical handle. Diameter of top, 0.096 m. Black glaze inside and out. The inscription, which is complete, encircles the top of the vase, and is divided into two parts by the handles.

Though every character is perfectly clear, no satisfactory interpretation of the inscription is here offered. A close parallel in letter-forms is afforded by an incised inscription on a fragment of black glazed ware from Mycenae (*I. G. A.* 29). In both this and in the inscription from the Heraeum *hέροος* corresponds exactly, letter for letter, even to the small *o*-signs and the narrow four-barred *sigma*. Yet to change τρυ- of the Heraeum inscription to τô is entirely too violent, and no other explanation suggested has more in its favor.

14. Brown clay, with dull black glaze. Silenus head in relief on top of vertical handle to left of inscription, which is set in a frame of incised lines.

ερ – – –

Can this be the same as No. **13**? The letters appear to be later.

Nos. **15–20** are incised on the outside of their respective vases; Nos. **21–23** on the inside; and Nos. **24–29** on the bottom.

The characters of No. **16** are similar to those of No. **2**.

No. **22** is on the reverse of No. **16**.

No. **26** shows the Corinthian form of *beta*.

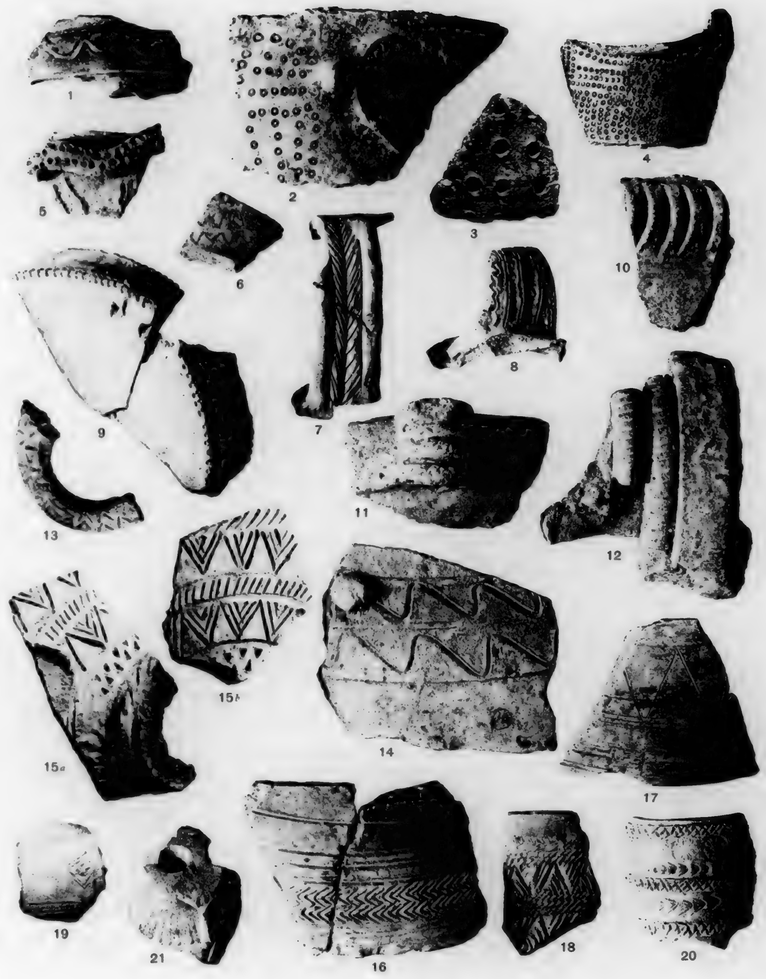
30. On bottom of small unglazed vase of dark gray clay. Inscription pressed into the moist clay before firing.

Ἡρακλεî
– – – ου – – –

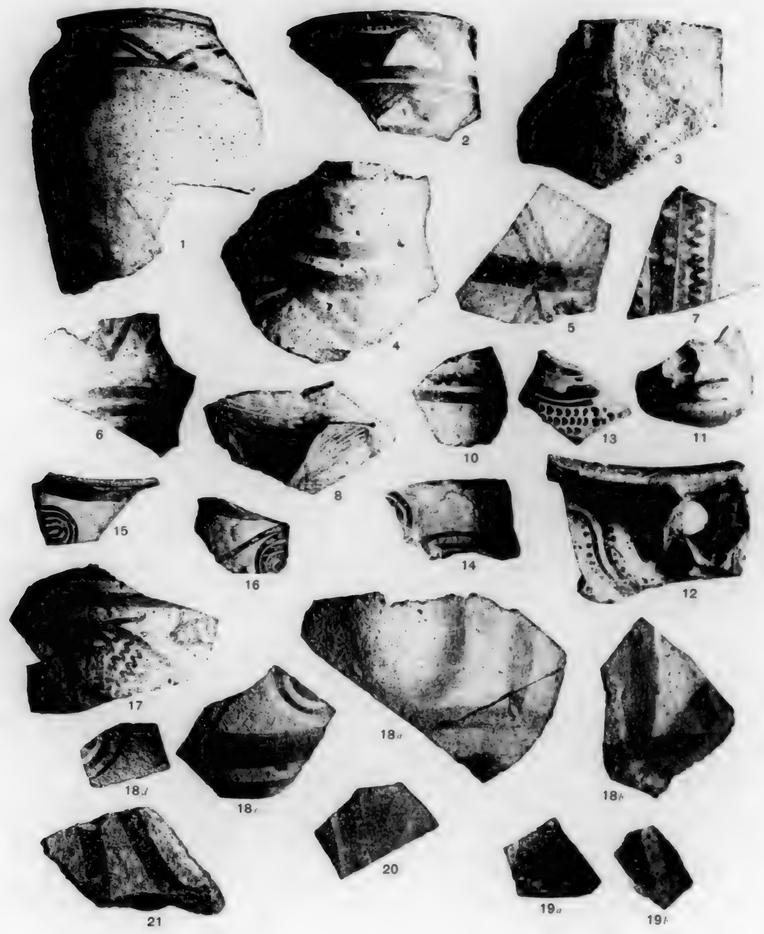
This inscription is shown by its letter-forms to be some centuries later than Nos. **1–29**.



VASE FRAGMENTS.—PRIMITIVE VASES



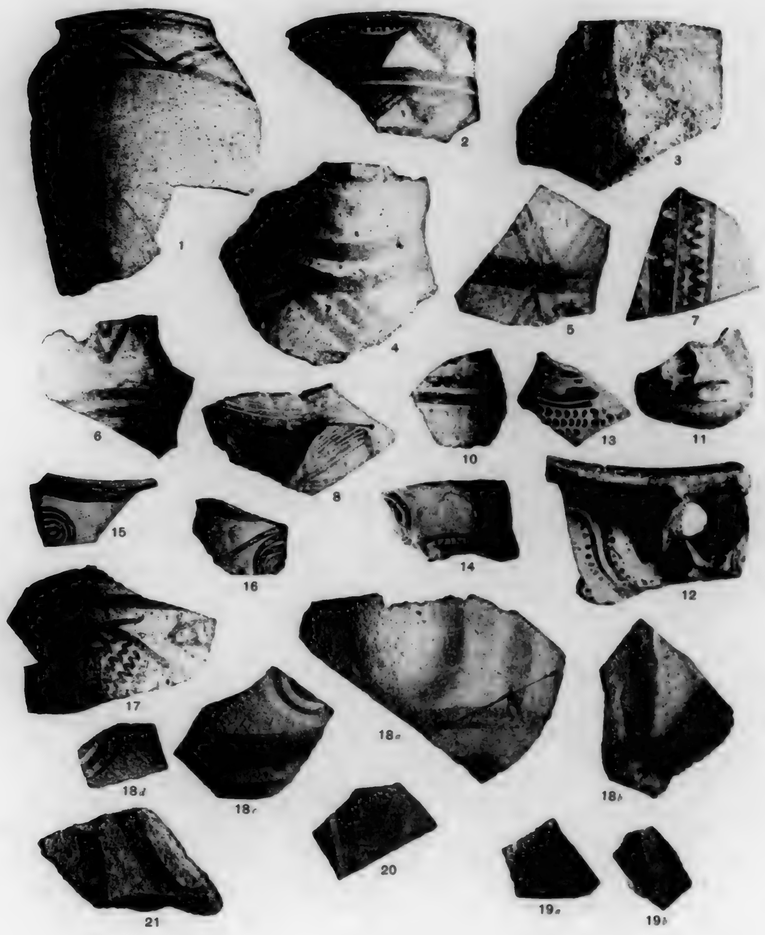
VASE FRAGMENTS.—PRIMITIVE VASES



VASE FRAGMENTS.—MYCENAEAN STYLE: DULL FINISH AND CLASS II, 1 LUSTROUS FINISH



VASE FRAGMENTS.—MYCENAEAN STYLE: CLASSES II, 2 AND III, 1.



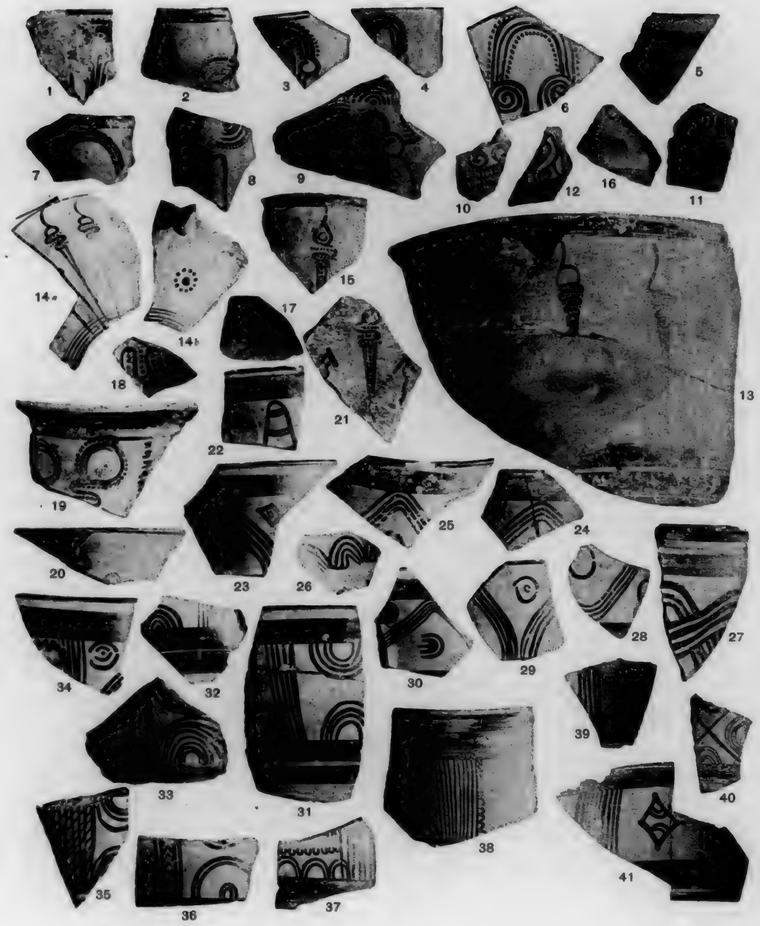
VASE FRAGMENTS.—MYCENAEAN STYLE: DULL FINISH AND CLASS II, 1 LUSTROUS FINISH



VASE FRAGMENTS.—MYCENAEAN STYLE: CLASSES II, 2 AND III, 1.



VASE FRAGMENTS.—MYCENAEAN STYLE: CLASS III, 2.



VASE FRAGMENTS.—MYCENAEAN STYLE: CLASS III, 2.



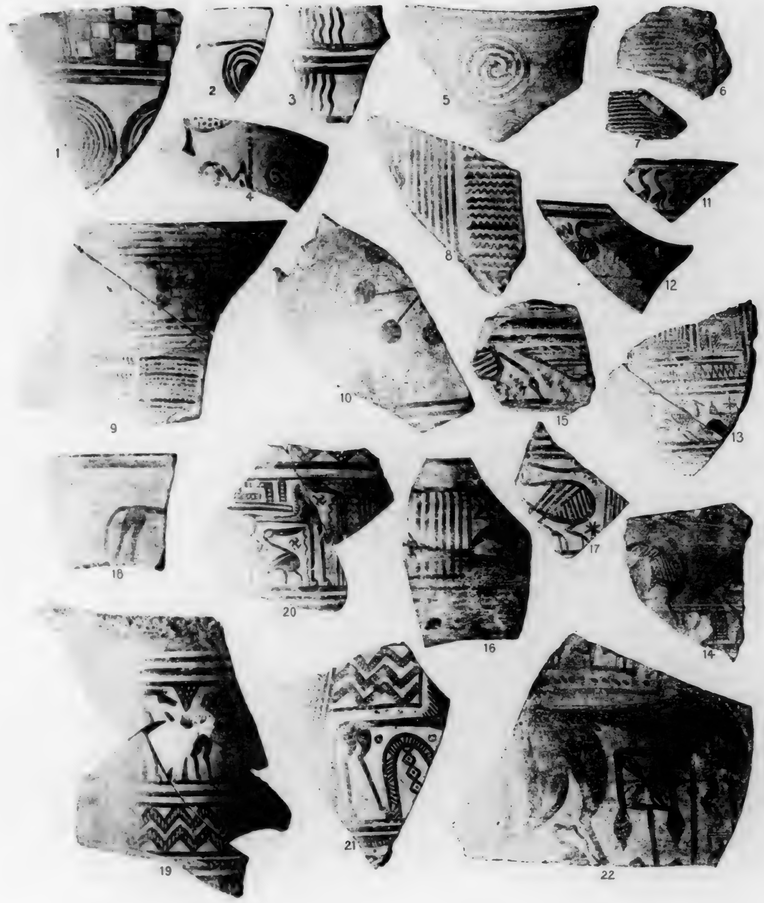
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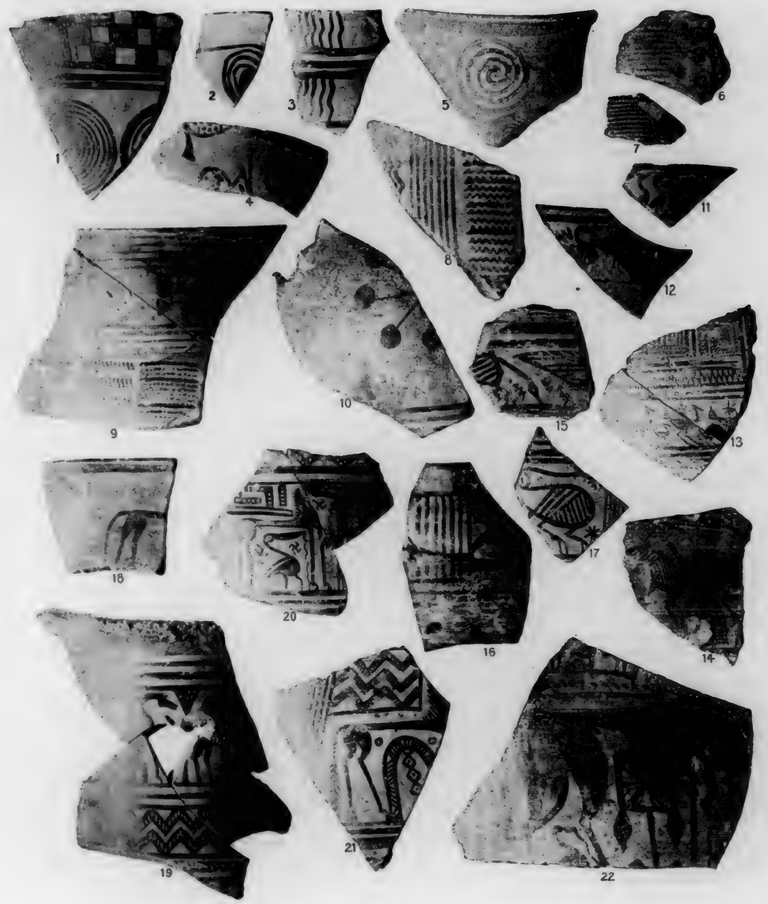
VASE FRAGMENTS.—MYCENAEAN STYLE: CLASSES III, 2 AND IV



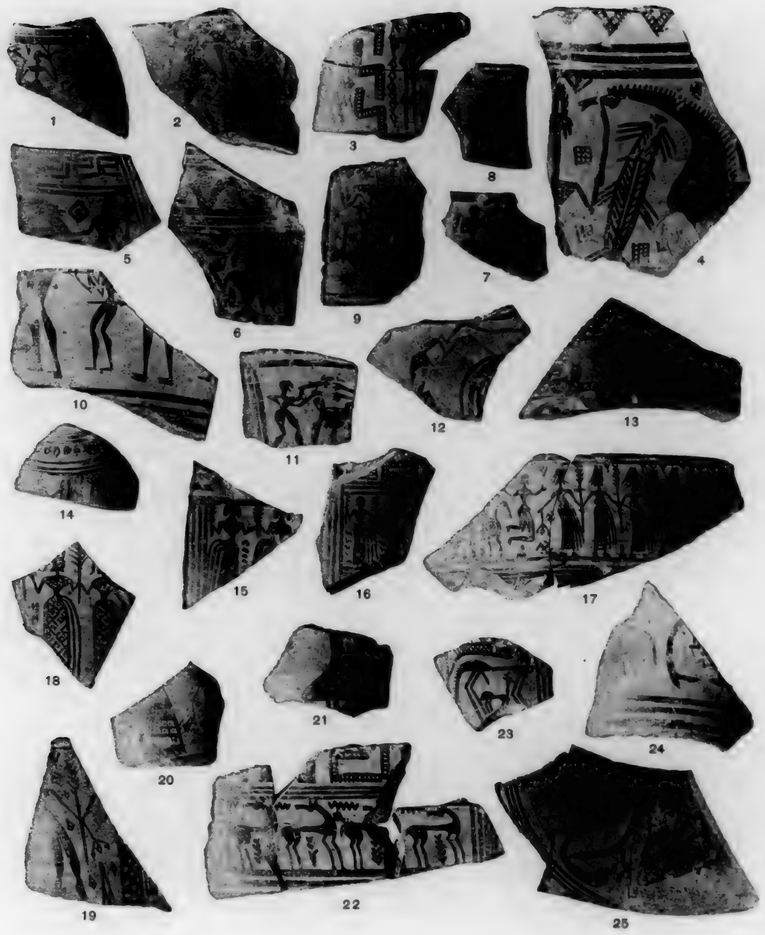
VASE FRAGMENTS.—GEOMETRIC STYLE: LINEAR MOTIVES, HORSES, BIRDS, ETC.



VASE FRAGMENTS.—MYCENAEAN STYLE: CLASSES III, a AND IV



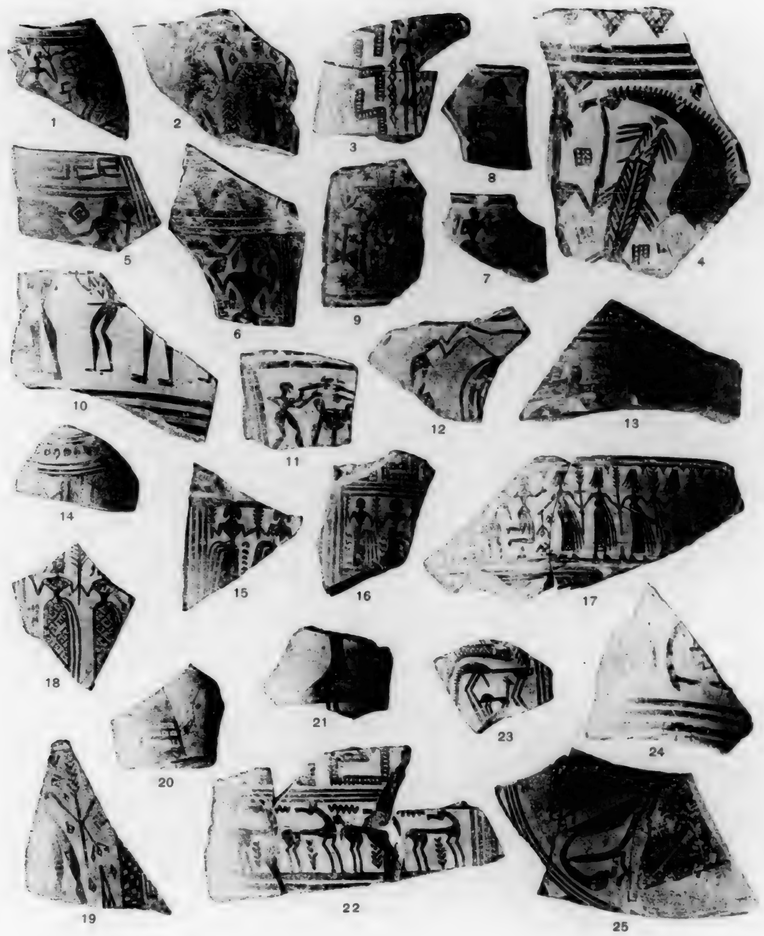
VASE FRAGMENTS.—GEOMETRIC STYLE: LINEAR MOTIVES, HORSES, BIRDS, ETC.



VASE FRAGMENTS.—GEOMETRIC STYLE: HUMAN AND ANIMAL FIGURES.



VASE FRAGMENTS.—GEOMETRIC STYLE: DIPYLON AND AEGINETAN.



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VASE FRAGMENTS.—GEOMETRIC STYLE: DIPYLON AND AEGINETAN.



VASE FRAGMENTS.—ARGIVE STYLE.



VASE FRAGMENTS.—LOCAL STYLE.



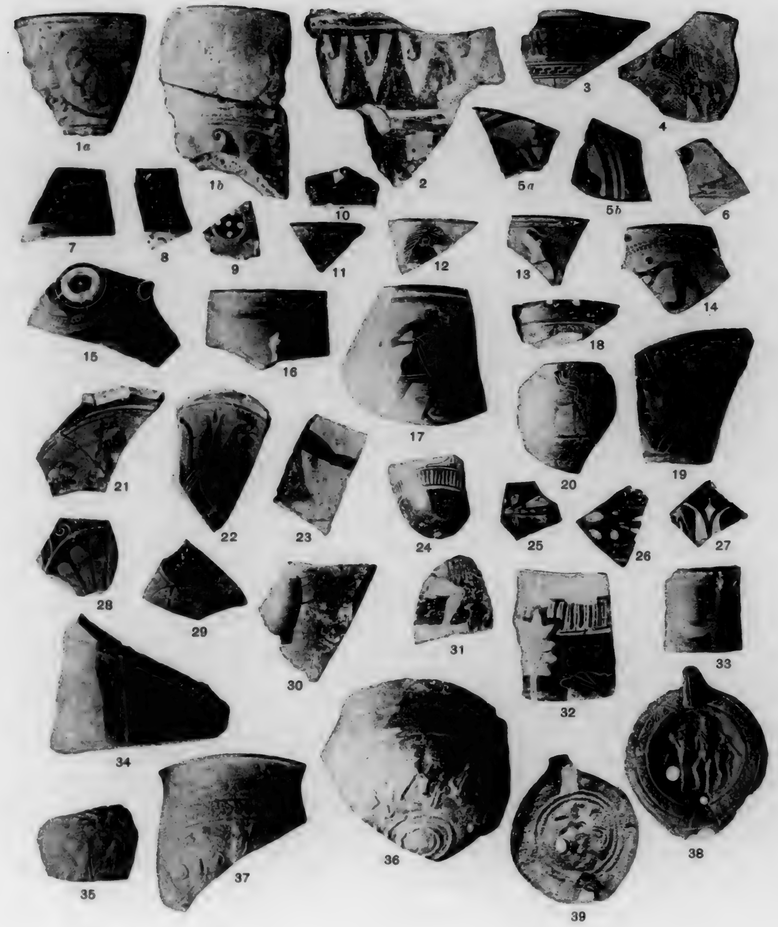
VASE FRAGMENTS.—ARGIVE STYLE.



VASE FRAGMENTS.—LOCAL STYLE.



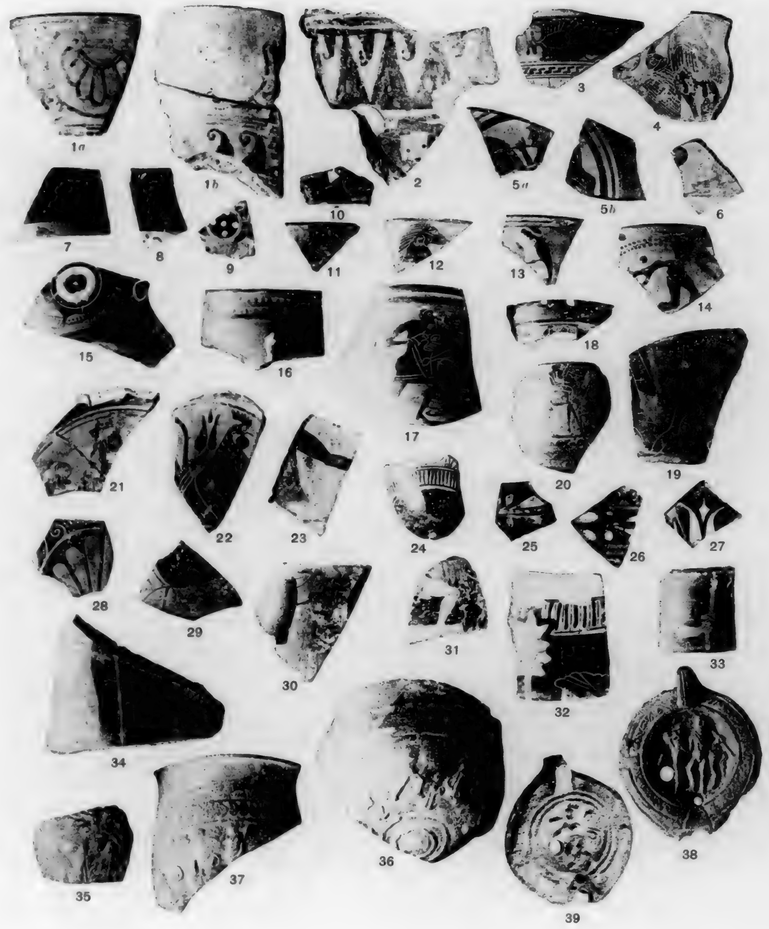
VASE FRAGMENTS.—CORINTHIAN STYLE.



VASE FRAGMENTS.—EARLY ATTIC, CYRENAEAN, RED AND BLACK-FIGURE, MEGARA WARE, ETC.



VASE FRAGMENTS.—CORINTHIAN STYLE.



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VASE FRAGMENTS.—VASES IN RELIEF.



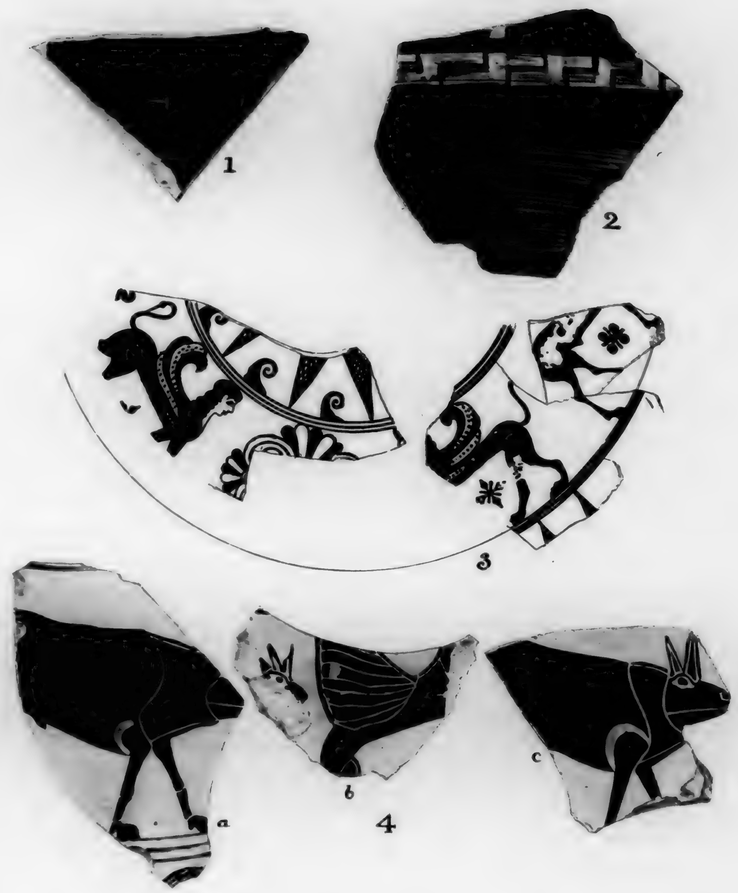
VASE FRAGMENTS.—VARIOUS ARGIVE TYPES



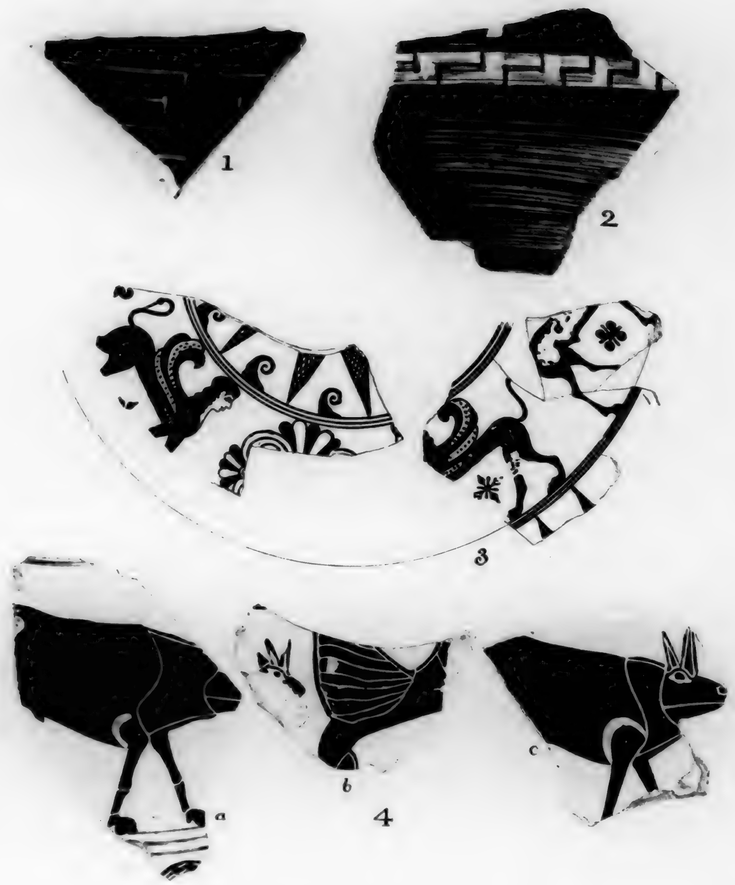
VASE FRAGMENTS.—VASES IN RELIEF.



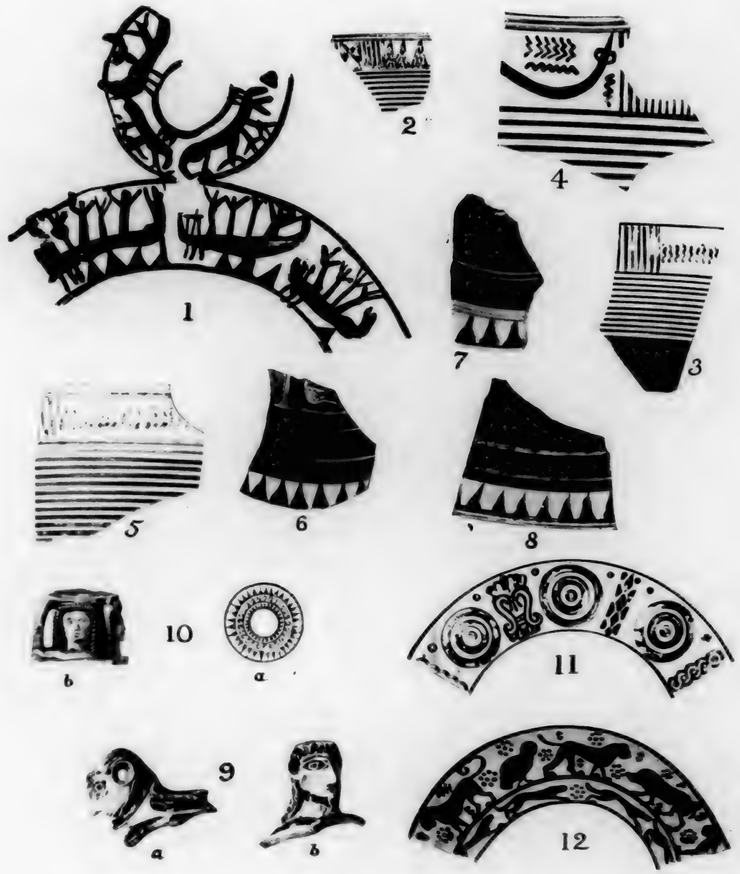
VASE FRAGMENTS.—VARIOUS ARGIVE TYPES



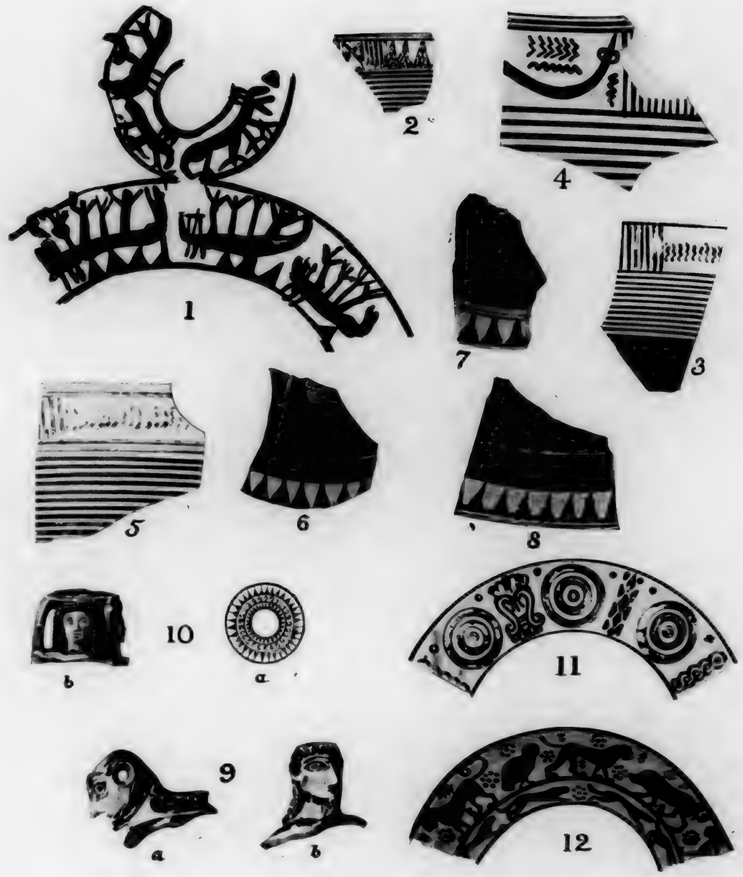
VASE FRAGMENTS. — ARGIVE STYLE: CLASS III



VASE FRAGMENTS. — ARGIVE STYLE: CLASS III



VASE FRAGMENTS. — GEOMETRIC, ARGIVE, AND LOCAL TYPES



VASE FRAGMENTS.—GEOMETRIC, ARGIVE, AND LOCAL TYPES



VASE FRAGMENTS. — LOCAL TYPES



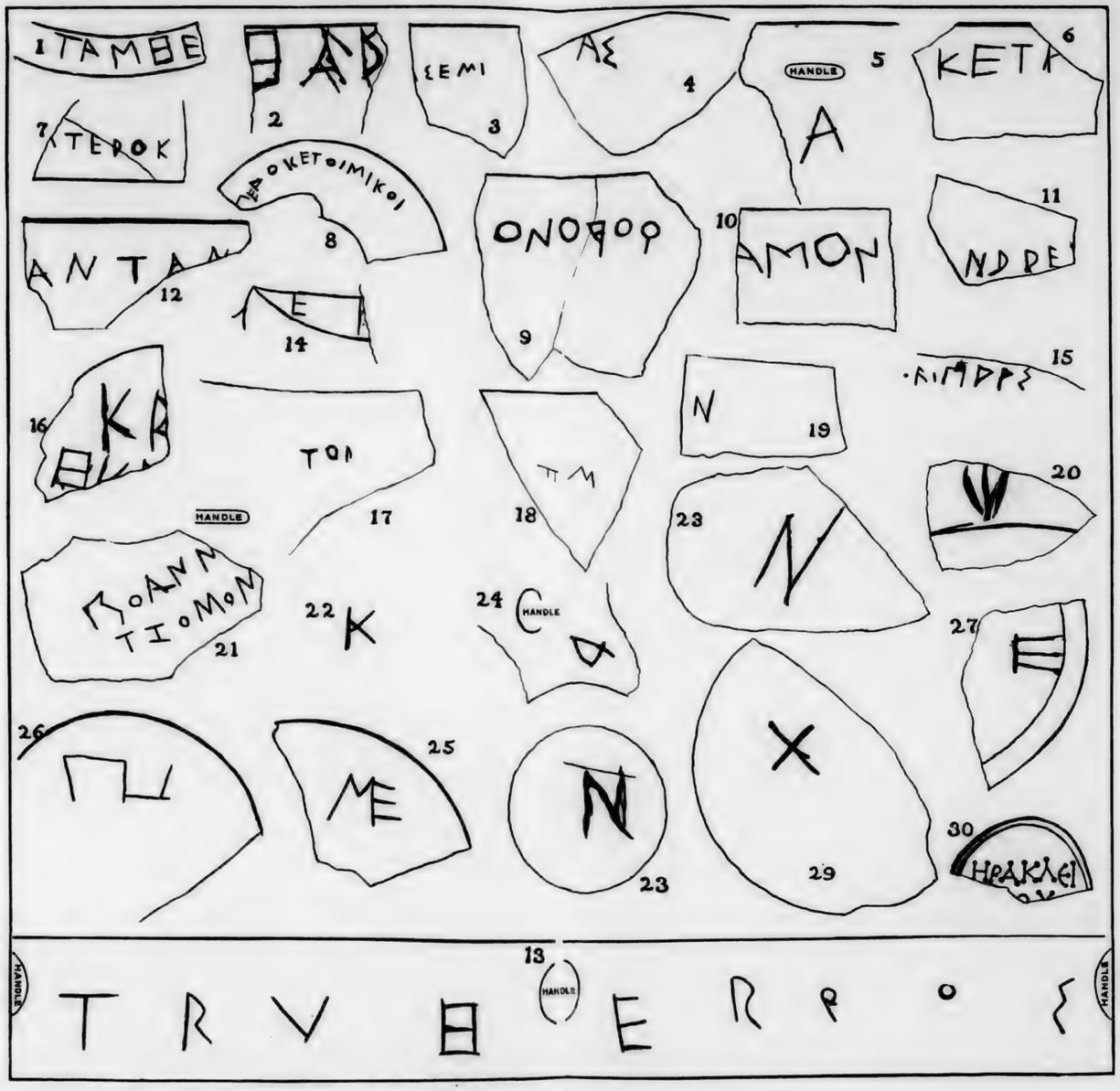
VASE FRAGMENTS. — LOCAL TYPES



VASE FRAGMENTS. — POLYCHROME KYLIX



VASE FRAGMENTS. — POLYCHROME KYLIX



VASE FRAGMENTS.—INCISED INSCRIPTIONS

THE BRONZES OF THE ARGIVE HERAEUM

THE BRONZES OF THE ARGIVE HERAEUM

By HERBERT FLETCHER DeCOU

INTRODUCTION

The Bronzes which are described in the following Catalogue[1] were found, for the most part, in the deposits and strata that yielded the larger portion of primitive and archaic objects in other materials, and their study is accordingly subject to the conditions of provenience which have already been set forth in the General Introduction (Vol. I. pp. 38 ff.). In other words, while many pieces were found on the uppermost terrace, and still more beneath and in front of the Cyclopean supporting wall of the same terrace, especially back of the Northeast Stoa (III), by far the greatest number lay on the west and south slopes of the main terrace, particularly near the southwest angle of the retaining wall described in Vol. I. pp. 118 ff., and so formed part of the rubbish employed in preparing the site for the Second Temple. Bronzes were also found in and about the West and Northwest buildings (VII, VIII), and, to a less extent, in other parts.

Distinctions in strata and periods of deposit, such as are mentioned in the General Introduction, Vol. I. p. 41, cannot be maintained so far as concerned the bronzes, because in their case no strata and very few depths were recorded. It may be said, however, that the general *terminus ante quem*, which is indicated for the majority of the finds by the date of the burning of the Old Temple (423 B. C.), holds with few or no exceptions for the entire mass of bronze material discovered in so far as dependence can be placed on considerations of style or comparison with the results of other excavations. Any further chronological distinctions which may be made rest entirely on such evidence.

Conclusions as to the purpose or use of buildings at the Heraeum cannot safely be drawn from the bronzes found in them, because the proveniences specially recorded, though including most of the more important objects, are in slight proportion to the total number found — 604 : 5738 approximately. To this principle the noticeable number of straight pins, fibulae, and rings attributed to the West Building (VII) can hardly be regarded as an exception, because it seems probable — at least to the present writer —

[1] Acknowledgments for assistance are given under the respective numbers in the catalogue, but I desire to express here my sense of particular obligation to Professors Richard Norton and J. C. Hoppin for aid of every kind, and to many other friends for encouragement and suggestions. Professor Norton's relation to the work requires furthermore a special statement. During my absence in Greece in the spring of 1903, he with the utmost kindness undertook and performed the tedious task of revising, condensing, and copying the manuscript of the Introduction and of numbers 1–1849 of the Catalogue. To Miss M. Louise Nichols is due grateful acknowledgment for the final revision of the entire manuscript for the printers. I am also under obligation to the editor-in-chief, Professor Waldstein, for permission to undertake the work and for various suggestions, and to the Archaeological Institute and the Committee in charge of the Heraeum publication for their patience and liberality. Especial thanks are also due to the Ephors in charge of the National Museum at Athens for their unfailing courtesy, as well as to the late Dr. A. S. Murray for permission to publish the silver pin (see PLATE CXXXVII.) and for the privilege of using the reading-room of his department in the British Museum. Finally, I am indebted to Mr. C. R. Morey for service as amanuensis generously rendered to Professor Norton and myself, and to Johannes Papadakes, τεχνίτης in the Museum at Athens, for much assistance in cleaning the bronzes and for many practical hints.

that some of them may belong rather to the deposits about the retaining wall above mentioned.[1]

The bronzes when discovered were for the most part heavily oxidized. In very few cases had the oxidation taken the form of a patina. The majority of the roughly oxidized pieces (some 3938 specimens) were cleaned by the slow and somewhat tedious process employed by the Greek government for the removal of oxides.[2] The patinated pieces were left untouched, together with others in which the oxides had already destroyed the bronze in whole or in part, and a considerable number of pieces which did not seem of sufficient interest to repay the trouble.

A brief account of the method of classification which has been followed in the case of these bronzes has been given in Vol. I. pp. 62 f. That in it the first division has been made according to *genera* rather than styles is due to the following considerations: (1) Throughout the study of these bronzes their rights and requirements as museum material have been kept in view. The first duty that is owed to the products of an excavation, after means have been taken to secure their preservation, is a convenient and systematic arrangement in a museum. Unless the strata or pockets in which the objects have been found are very sharply defined or clearly distinguished, the arrangement by kinds or subjects is the more convenient. (2) The same principle holds true for the first publication of the finds, because the primary object of this is, of course, to make the finds available to the public as material with which to work. In other words, the first publication of an excavation should be a portable museum, so to speak, of the objects found. (3) Our knowledge of the history and interrelations of the styles of early Greek art is, in the opinion of the writer at least, too slight and unstable to make it safe or desirable to found thereon a classification which, whether for museum or first publication, should in its main lines, at least, be, so far as possible, permanent.

In the second division an attempt has been made to group and order the objects according to style and chronology, but the method followed has been, where possible, inductive; that is, the selection and arrangement of catalogue numbers has been made with a view toward securing a continuous development from one subdivision of a type to another, and, where it seemed practicable, from type to type. It is for this purpose that many objects have been entered and described which would not of themselves be of any especial value or interest.

Though the so-called styles have not been made the main basis for classification, a list of the principal types and objects which would be attributable to them has been given in

[1] The West Building came to light before the constructions east and southeast of it, and objects found were labeled accordingly until the outline and relations of the successively appearing walls became clear.

[2] Described *Deltion*, 1888, p. 228, and *J. H. S.* X. p. 275. Cf. Bather, *J. H. S.* XIII. p. 124. A brief description of the process may be of service to those who do not have access to the *Deltion*. In a glazed earthenware bowl is spread a layer of scraps of zinc. On this are laid the bronzes to be cleaned. They are then covered with water into which about ten per cent. or less of hydrochloric acid is poured. At intervals which should not exceed two days, at least in the earlier part of the process, the bronzes and zinc (if any remains) must be taken out and brushed with a stiff brush, the bowl rinsed, and a fresh bath prepared in the same manner as the first. The proportions of zinc and acid vary with circumstances, and must be learned by practice. This part of the process may require to be protracted from a week to a year or more, but, if all has gone well, its result is to leave the surface of the bronze entirely free from verdigris and covered with a dark brown deposit which in no way interferes with the clearness of the finest details. The remainder of the process is brief. On removal from the bath just described the bronzes are put into a solution of potash (ὑδράκιον κάλιον) consisting of about one part of potash to nine of water. After twenty-four hours they are removed and placed for the same period in distilled water. They are then dried and covered with a thin coating of melted white wax. A vigorous polishing with a brush completes the process.

the abstract cited above. As the material for comparison derived from deposits of datable periods is not very extensive, this list can be considered only as an approximation. Until more material is at hand, the "Primitive" period must be regarded as but scantily represented, the suspension vase (No. 2019) being almost the only object which could not well be put in one of the later periods, and even the earlier Mycenaean period offers nothing which could not equally well be assigned to later Mycenaean times.

Under "Geometric" have been included various things which should perhaps be kept apart, i. e. small animals cast in imitation of hammered technique, and engraved, punched, and *repoussé* linear designs, but as the occurrence of figures of similar technique in connection with engraved or linear ornamentation imitated in cast work is well known in the case of the large tripods, and the distinction between punched and *repoussé* work is often difficult to maintain, especially in the case of thin metal strips, it seems justifiable to group objects of similar style together without prejudice to the question as to the origin of their respective techniques. Where this is done, however, it is necessary to guard against the danger of drawing conclusions as to development and chronology from what may very likely be a fortuitous association. Because a certain type of figurine is found in certain cases in connection with engraved linear ornament, it by no means follows that we have the right to put all the bronzes which have linear ornament along with them and thus build up a great class. So at the Heraeum the tripod legs, the animals of style similar to the figures which occur on tripods, and the fibulae with the same style of figures engraved on the blade very probably belong together, but there is no adequate reason for placing the other objects, such as pins, sheathings, etc., which have linear designs, in the same category historically. Many of them are probably much earlier.

The small number of bronzes of the so-called Dipylon style thus left indicates plainly enough the slight and transitory character of the influence of this style on Argive metal work. Such specimens as Nos. 23 and 49, which have linear ornaments, are under the influence of the geometric style only in the wider sense referred to above. We can scarcely speak of a Geometric or Dipylon period so far as concerns Argive bronzes.

As has been pointed out in the above-mentioned abstract, the same is true at Argos of the so-called Oriental style. Modification of design, as in the case of the griffin, under the influence of the Orient, there may be, but that here Argos herself bore a considerable share in the construction of the new type may be inferred from the Argive crater mentioned by Herodotus (IV. 152). The essential qualities of style and technique remain what they were before, that is, Mycenaean.

The space required for the catalogue renders it inexpedient to enter here into a more general discussion of the relations of Argive metal work to that of the other centres of similar industry in Greece and Ionia. While this is reserved for another occasion, there are two points to which attention should be called: (1) The uniform technical excellence exhibited by the Heraeum bronzes, even the earliest of them; the inscription No. 1826 will serve as an approximately datable example of masterly handicraft. (2) Inasmuch as the bronzes from the Heraeum exhibit the same qualities of design, style, and technique as very many others which have been found at Olympia, Athens, Dodona, and elsewhere, it seems reasonable to consider the claims of Argos to a large share in the manufacture of such pieces as paramount, resting as they do upon a continuous tradition from Mycenaean times down and upon the actual finds.

CATALOGUE OF BRONZES

I. FRAGMENTS OF STATUES

PLATE LXX.

1.[1] Lock of hair. Provenience unknown. Broken at top. Damaged by oxidation. Straight except end, which curls out and slightly to right. Length, 0.154 m. Width at top, 0.009 m. Thickness at top, circ. 0.0025 m.; at bottom, circ. 0.0015 m. Height of curl, 0.008 m. Width of curl, i. e. diameter of semicircle formed by it, 0.018 m. Engraved in parallel lines to show single hairs. Eight grooves at top, four at bottom of curl, where they stop just past the middle. Uncertain whether engraving was not carried to end of curl, as surface is damaged at that point. Sides engraved with two grooves each.

2. Lock of hair. Provenience unknown. Broken at both ends. Length, 0.10 m. Width at top, 0.008 m.; at bottom, 0.0065 m. Thickness at top, 0.0045 m.: at bottom, 0.0025 m. Engraved to represent three strands of hair; single hairs indicated within each strand by finer lines. In first strand on left, four grooves at top and three below; in second, three at top and two at bottom; three in third. Along middle of each side, a single groove.[2]

II. STATUETTES AND FRAGMENTS OF STATUETTES

PLATE LXXI.

3. Horseman. From south slope, southwest corner, 1895. Surface thickly oxidized and damaged. Legs broken below knees. Hands broken, the left at wrist, the right above. Somewhat overcleaned. Original surface shows around navel and fairly well beneath nipples, on upper back, on forehead, and on inner right thigh. Height 0.1275 m. Cast solid. Figure was rider as shown by position of legs, hands (hole for reins), and hole in bottom for attachment to horse. Depth of hole, 0.11 m.; direction along axis of body so attitude of figure depended on whether dowel leaned back or was upright. Latter unlikely, as it would have made figure sit too upright.[3] Arms hang stiffly; upper arms about in axis of body; forearms at nearly right angles to upper arm.[4] Right forearm bent unnaturally. Right forearm from inner angle of elbow to knuckles, 0.031 m.; left forearm, 0.024 m. Otherwise arms naturally modeled, though no details are given. Hands perforated for round (wire?) reins. Thighs disproportionately large, especially towards hips. Knee-caps carefully indicated. Shoulders broad and square compared with waist. Upper part of chest with nipples very full compared to parts beneath.[5] No certain indications of muscles, only faint lines running horizontally across chest, distant from pubes 0.031 m., 0.0165 m., 0.0145 m. These probably accidental and due to oxidation. Note that two planes meet at the nipples. Slight swelling of abdomen. Navel slightly indicated. Distance from pubes to plane of nipples, 0.037 m.; to base of neck, 0.0565 m. Distance between nipples, circ. 0.019 m. Back has no details except slight depression along spinal column. Angle of back to rump too sharp, thus making hips too prominent. Head high and shallow. Height from chin to top, 0.026 m. Depth from forehead to back, circ. 0.021 m. Width above ears, circ. 0.019 m.[1] Face high and well proportioned. Contour vertical. Distance from tip of chin to approximate end of nose, from end of nose to beginning, from beginning to top of forehead, each circ. 0.006 m. Flat cheeks have high bones. Chin broad and flat. Mouth small, curving slightly upward. Nose was straight. Eyes large, rounded, set in large sockets. Upper lid and eyebrow of left eye may be traced. Measurements by Kalkmann's system (in metres):—

Hair-nose. Lower face.	Hair-mouth. Mouth-chin.	Hair-eye. Eye-chin.	Hair-eye. Eye-nose. Lower face.	Hair-eye. Eye-mouth. Mouth-chin.
* 0.011(5)	* 0.014(5)	0.006(5)	0.006(5)	0.006(5)
0.007	0.004	* 0.012	* 0.005	* 0.008
* 0.018(5)	0.018(5)	0.018(5)	0.007	0.004
			0.018(5)	0.018(5)
Cancu.				
* 0.012	* 0.014	0.006	0.006	0.006
0.006	0.004	* 0.012	* 0.006	* 0.008
* 0.018	0.018	0.018	0.006	0.004
			0.018	0.018

Ears about normal, but superficially treated. Project nearly at right angles. Upper edge of lobe on line with outer corner of eye. Top on line with eyebrows. Slight attempt at detail. Hair much injured on top.[2] Original treatment uncertain. Bound by taenia, which is visible at back and up to ears, but uncertain whether it passed over top of head or over forehead, and was covered at sides by overhanging locks. Former seems more probable. At back, hair falls to shoulders in heavy rounded mass, ending in flat tip. Originally engraved with fine lines running toward tip. Of this only slight indications remain. Tip at end shows tying of ends of hair. No folding either under or over.[3] No trace of cord, but trace of depression where it passed. Height of tip, 0.007 m.; width, 0.008 m. Falls circ. 0.009 m. below top of shoulder. Front of hair formed by three carefully engraved curls starting behind ears and falling backward in a curve towards tip.[4] Neck large and thick. Height, 0.004 m. Period to be determined from head, which is more advanced than body. Later than the "Apollo" figures of the first group (Thera, Orchemenos, Melos, etc.), but earlier than the Apollo of Canachus at Didyma or its replicas (Payne-Knight, Piombino, Naxos, etc.). Probably a little later, to judge from hair and arms, than the statue at Delphi by Polymedes (Homolle, *B. C. H.* XXIV. [1900], pp. 445 ff.). The bronze reliefs, *Olympia*, Nos. 707 (pl. xxxix.), 707 a, are not closely similar in style.

PLATE LXX.

4. Bearded standing male figure. Provenience unknown. Height, 0.0605 m. Cast solid. Surface suffered from oxidation. Arms hang stiff, with hands open and flat, with extended fingers attached to thighs. Arms small, with no modeling. Left thumb seems to show a nail. Length of arms, including fingers, right, 0.0235 m.; left, 0.024 m. Arms separated from body by relatively large opening which is cut higher on right side. Legs and feet fastened together, even to tips of toes. Toes partially indicated on left foot. Contour of legs fairly good. Length of feet, left, 0.008 m.; right, 0.007 m. Broad square shoulders. Body and waist not excessively thin. No indication of belly, navel, or nipples, but chest slightly fuller than abdomen. Circumference at shoulders, 0.047 m.; at waist,

[1] Objects the catalogue numbers of which are printed in heavy-faced type are illustrated on the PLATE cited above them; light-faced types in these numbers indicate that the objects are not illustrated.

[2] Cf. *Olympia*, IV. Nos. 25, 26 [pl. v.], and 28 [text, p. 15], and Nat. Mus., Athens, No. 6798 (De Ridder, No. 624), from the Acropolis.

[3] Gait of horse probably slow, if rider leaned back, as examples of galloping or rearing horses the riders of which lean forward are numerous in archaic art. Cf. amphora from Caere, *Wiener Vorlegeblätter*, 1889, pl. x., two amphorae of Nicosthenes, *ibid.* 1890–91, pl. iii., cylix of Pamphaeus, Harrison and Macoll, pl. viii., and one of Onesimus, Hartwig, *Meisterschalen*, pl. liii. An exception on pithos in Vienna, Masner, *Samml. antiker Vasen*, p. 19, No. 210. Upright rider with head forward on slow horse on Corinthian aryballos, Lau, *Die griech. Vasen*, pl. iv. No. 2.

[4] Bronze rider found between Sparta and Megalopolis, now in Nat. Mus., Athens (No. 7549 = De Ridder, *Bronzes de la Soc. Arch.* No. 860, pl. ii.), has about same angle at elbow, but greater angle at shoulder: hence hands meet lower down.

[5] Cf. Holleaux, *B. C. H.* XI. p. 363, and examples of extra Peloponnesian provenience, the marble statue in the Brit. Mus. (*Catalogue*, Vol. I. p. 84, No. 205; cf. Furtwängler, *A. Z.* 1882, pp. 51 ff. pl. iv.), and the marble horseman in the Acropolis museum, No. 590 (Winter, *Jahrbuch*, VIII. p. 138, No. 7; Sophoules, Ἐφημ. Ἀρχ. 1887, pl. ii.). Torso from Actium in the Louvre, *Gaz. Arch.* XI. (1886), pp. 235 ff. pl. xxix. (Collignon).

[1] Note brachycephalism (cephalic index 90!) as compared with shape of later Peloponnesian heads.

[2] Cf. *B. M. Cat. of Bronzes*, No. 210, and Perrot and Chipiez, *Histoire de l'Art*, I. (*Égypte*), p. 664, fig. 452.

[3] End of tip folded under in Nike of Archermus type, Acropolis Museum, No. 690, as is shown by lines of engraving. For doubtful cases, cf. François vase, *olνοχόη* of Cholchos in Berlin (*Wiener Vorlegebl.* 1889, pl. i. 2 b), hydria of Timagoras in the Louvre (*ibid.* pl. v. 4 c), and b.-f. amphora (Gerhard, IV. pl. cclxiv. 1).

[4] Thus differing from early "Apollo" type (Orchemenos, Thera, Melos, etc.) on the one hand, and on the other from types represented by statuettes from Naxos (Fränkel, *A. Z.* 1879, p. 84, pl. 7) and from Ptoön (Holleaux, *B. C. H.* X. p. 190, pl. 9). An intermediate or combination type also from Ptoön (Kabbadias, Κατάλογος τῶν Γλυπτῶν, No. 16, Holleaux, *B. C. H.* X. pp. 73 ff., pl. 7), with one curl over breast and two over shoulder behind. See in general, Conze, *Nuove Mem. dell' Inst.* pp. 408 ff., Waldstein, *J. H. S.* I. pp. 168 ff., Schreiber, *Ath. Mitth.* VIII. pp. 246 ff., IX. pp. 232 ff., Studniczka, *Jahrbuch*, XI. (1896), pp. 289 ff.

0.03 m. Back short. Rump high and prominent, parted by groove, which continues straight down to bottom of feet. Head high and wide, but shallow. Height, 0.0145 m. Width above ears, 0.0125 m. Depth from bridge of nose to back, 0.011 m. Face retreats sharply from tip of nose to top of forehead. Top of forehead seems to form ridge running nearly from ear to ear. It may be a diadem, but probably not. Nose short and prominent. Eyes large, in large sockets. Left more rounded than right. Mouth short (0.0035 m.) and wide. Under lip flattened, with groove near the top, thus making mouth seem wide open. Chin long. Beard mainly destroyed, showing chiefly in sharpness of angle along line of jaws. Ears large and prominent, set high. Slight attempt at modeling interior of ear, noticeable especially in right. Top of forehead to bridge of nose, 0.0075 m. Tip of nose to mouth, 0.002 m.; to chin, 0.0065 m. Bridge of nose to ears, 0.008 m. No indication of particular dressing of hair.

5. Upper part of female figure. From south slope. Height, 0.094 m. Cast solid. Figure broken at navel. Arms also broken. Front of hair damaged on the right side, between centre and right rosettes, and the right rosette (not earring) is destroyed. Headdress broken, so that original form is uncertain. On right side, lower right volute was apparently attached to the lotus-blossom above by transverse piece, of which only stub remains. On lotus-blossom just above lower right corner is seen place where something was attached. Centre of this place, 0.00125 m. from upper right side of flower. On left side, left volute gone. On left side of lotus, 0.012 m. from top of left side is similar attachment place to that on right side. Top of headdress slightly irregular but does not appear to be broken, as lines of engraving of the back piece continue over top. Surface of bronze well preserved except for abrasions. Figure was probably standing. Left hand probably held object. Action of right arm uncertain, but probably held something[1] stretched out from elbow. Action of lower part of figure uncertain but seems probable that it was a free-standing statuette, though it may have stood on a base. Figure entirely nude,[2] as shown by indication of navel.[3] Style of figure archaic of advanced type, marked by ease and sureness of technique. Breasts, slight and angular, ending in blunt and rounded points. No indication of nipples. Body modeled in two planes; the upper from neck to nipples, lower continuing thence straight downward. Between breasts and navel two broad shallow furrows, connected by similar perpendicular furrow.[4] Back without details. In general, body of this figure shows artist's effort to escape from uniformity and sexlessness of the nude type. Considerable skill, relatively, is shown in modeling of arms. Position of right arm together with muscle shows that it did not hang loosely, but was probably extended at elbow. Neck full and rather long. Length, 0.007 m. Sharply differentiated from the body. On chest just below neck is necklace in zigzag pattern.[5] Head high and somewhat shallow. Height from chin to top of headdress in front, 0.021 m. Depth from bridge of nose to back, circ. 0.0175 m. Forehead appears low because of headdress, but quite full over eyes. Eyes large, set in plainly defined sockets. Ball of eye full. Upper and lower lids shown. No prolongation of upper lid over lower at outer corner. Indication of eyebrows uncertain. Nose straight and regular. Mouth short (0.0035 m.). Lips prominent, rather thick.[6] Chin pointed and prominent. Cheek-bones high. Cheeks well modeled. Kalkmann's measurements: —

a Hair–nose. Lower face.	a Hair–mouth. Mouth-chin.	Hair–eye. a Eye-chin.	Hair–eye. a Eye–nose. Lower face.	Hair–eye. a Eye–mouth. Mouth-chin.
0.009	0.012	0.006	0.006	0.006
0.007	0.004	0.010	0.003	0.006
0.016	0.016	0.016	0.007	0.004
			0.016	0.016

[1] Perhaps flower, as in bronze statuette in Trau collection (Gurlitt, *Arch.-Epig. Mittheil. aus Oesterreich*, II. pp. 159 ff., pl. viii.).

[2] For other examples of nude female type, cf. Körte, *Archäolog. Stud. H. Brunn dargeb.* pp. 19 ff., De Ridder, Ἐφημ. Ἀρχ. 1895, coll. 171, n. 4. Also Marx, *Athen. Mitth.* X. pp. 177 ff., pl. vi.

[3] Διάζωμα, as in mirror-handle, Ἐφημ. Ἀρχ. 1895, pl. vii. (De Ridder), not excluded.

[4] Cf. Naxos statuette, *Arch. Zeit.* XXXVII. (1879), pl. vii. (Fränkel), and horseman from Peloponnese, De Ridder, *Bronzes de la Soc. Arch.* No. 860, pl. ii.

[5] Cf. Perrot and Chipiez, *Histoire de l'Art*, I. (*Égypte*), p. 762, fig. 511; III. (*Cypre*), p. 531, fig. 358. Design occurs also on several terra-cottas from the Heraeum.

[6] Cf. archaic female terra-cotta head in Acropolis Museum (Αθηνᾶ Εἰδωλίων, case η), bronze statuette in National Museum at Athens (No. 6576), and terra-cotta mask from Tanagra in same museum (No. 4143).

Ears slightly indicated under headdress. Rosettes projecting from headdress opposite angle of jaw, undoubtedly earrings. If lobe of ear is considered as coming as far down as these rosettes, the ears would be placed remarkably correctly for an archaic work. Head on top and behind covered with sort of wig of nearly uniform thickness. This wig lies low on forehead. From temples it slopes off to the ears, beneath which it swells forward to about middle of side of neck. Hair falls down at back to a blunt point. No indication of tying at tip or of folding under. From top of shoulders, two flat curls, hanging downward on either side of the breast. Headdress ornamented with rosettes[1] above the temples and the centre of forehead. They consist of slightly concave disks, with tiny knob in centre. From this centre engraved lines radiate to outer edge. Hair and curls ornamented with short, oblong punch-marks, except on left side of head. For front hair (forehead, neck, and curls) a smaller punch seems to have been used. Above headdress is ornament of lotus flower and bud, rising from volutes.[2] Height, 0.0305 m.

Of these volutes, three remain, of which the two larger are placed back to back. The other at the right curls under end of bar which connects the former. Whether there was another volute is uncertain. These volutes ornamented with irregular engraving. The larger volutes were meant to be connected by oblong ornament across their face. This ornament consists of a zigzag inclosed by a rectangle, and seems to have been stamped with a concave punch. The lotus ornament rises above central volutes and consists of bud, sides of flower and palmette-shaped back of same. Bud ornamented by fine line running near edge, all around from top of stalk, and by slight punch-marks struck between the lines. Back of ornament is entirely plain, and rests against nail-like support[3] growing out of top of head, with which it is cast in one piece. Lotus and volute seem cast separately and welded on to head.[4]

Probably to be understood as Aphrodite with Orientalizing headdress. Cf. De Ridder, *Bronzes de l'Acropole*, Nos. 806, 820, 799 ff., and Petersen, *Athen. Mitth.* XI. p. 375. For indirect analogies, cf. Astarte with Hathor crown, Roscher, *Lexikon d. Mythologie*, I. coll. 652 f. (E. Meyer), the Syrian, Cypriot, and Graeco-Roman combination Aphrodite-Isis, *ibid.* II. coll. 495 (Drexler), and the Hellenistic identification of Isis with Io, *ibid.* coll. 439 f. Not to be identified with Isis, because earlier than introduction of her cult into Greece.

Period about that of Apollo of Canachos at Didyma.

6. Fragment of leg. Provenience not known. Badly preserved. Length, 0.0325 m. Cast solid. Probably of male figure. Modeling superficial. Knee-cap appears to have been especially indicated. From appearance of back on the left seems to be right leg.

7. Fragment of leg. Length, 0.022 m. Provenience unknown. Solid. Left side slightly flatter than right. So probably piece of left leg. No details. Bent slightly at knee.

III. ANIMALS

FREE AND ATTACHED FIGURES

1. HORSES.

GEOMETRIC STYLE.

Type a.

PLATE LXXII.

8. Stallion. Found back of South Building. Solid. Base broken off in cleaning. Tail gone except where attached to base. Hind legs, front left leg, and nose close to neck broken. Otherwise fairly well preserved. Original height, 0.068 m. Present height with base, 0.064 m. Body cylindrical and rather long. Attempt to indicate shoulders. Legs flat, especially near body, where they are slightly hollowed on inside.

[1] Cf. Cesnola, *Descriptive Atlas of the Cesnola Collection*, II. pl. xlviii., Perrot and Chipiez, *op. cit.* III. (*Cypre*), p. 545, fig. 371, and head from Cyprus in Nat. Mus. at Athens (No. 66).

[2] Cf. volutes on sphinx-heads on scrap of archaic bronze relief from Corinth. *Jahrb.* IX. Anz. p. 117, fig. 10.

[3] Top of support flat, closed, and ornamented with zigzag near edge. Represents mouth of lecythus. Cf. Heuzey, *Figurines de terre cuite du Louvre*, pl. xiii. Nos. 4 and 6 (Rhodes), Körte, *Arch. Zeit.* XXXV. pp. 116 f., pl. ii. (Orvieto), Winter, *Jahrbuch*, XIV. pp. 73 ff.

[4] Ornament appears to be translation of Osiris crown into terms of lotus. Thus the crown of upper Egypt is represented by bud, plumes by sides of flower, ram's horns by extended volutes at base, and asp heads perhaps by last upper portions of volute.

Hocks and knees indicated by knobs or protuberances. Neck wide and flat, with curve where mane should be. Bent slightly to right. Nose rectangular, upper head flattened. Forelock indicated. Eyes and ears not clearly distinguishable. Base[1] ornamented on under side with line running entire length. On left side of line, tooth-ornament. On right side a heavy zigzag, outside of which along edge a narrow tooth-ornament pointed inward. Near front right corner, small indentation. Front left corner broken off. This animal is of the severe or angular geometric style, marked by long body with angular jointing of neck and legs, crupper rising very little above back. Extreme flatness of neck also a feature of this phase of the style.

9. Hind part of horse. Stallion. Provenience unknown. Fragment. Heavily oxidized. Height, 0.032 m. Solid. Body slightly almond-shaped, being narrower at top. Legs flat, joined to body angularly. Parts between legs and under tail deeply undercut.

Type b.

10. Horse with base. Provenience unknown. Neck and tail broken. Solid. Height, 0.004 m. Length of base, 0.0355 m. Width in front, 0.0135 m. Body short, slightly almond-shaped, as No. **9**. Crupper high. Legs long and flat. Hips and shoulders not sharply set off, nor is joining to body angular. Attempt to show difference between fore and hind quarters at juncture with body. Knees and hocks shown by sudden decrease in thickness on outside, the inside lines being straight. Body undercut between legs, especially at back. No indication of sex. Feet not distinguished. Neck flat. Base plain on top. Below deeply undercut so as to show zigzag in relief, running lengthwise, with field at either side inclosed on front and sides by rim or frame, which is omitted at back. Shortness of body, lack of angularity of joining of legs, and treatment of back mark this as milder geometric style. Antiquity shown by treatment of knees, hocks, and plainness of neck.

11. Horse with base. Found southeast of temple, near wall, 1893. Right hind leg broken. Solid. Height, 0.0445 m. Length, 0.046 m. Length of base, 0.04 m. Width, 0.016 m. Body small, nearly cylindrical; rather long. Crupper high, joining back with natural curve. Neck joins body more angularly, but softened with attempt to imitate nature. Legs small; shoulders scarcely marked, and hind quarters very small. Knees indicated only by outward bend. Left hock fairly truthful. Tail hangs straight down and is attached to base. No indication of sex. Neck flat, slightly curved along the mane. Ears indicated. Between them ridge for forelock. No certain indication of eyes, but an engraved line from right ear to top of nose, continued on other side to mouth. Joined on right side (of animal) by similar line. A semicircle engraved close to end of nose. Top of base plain, but bottom ornamented with zigzag pattern, consisting of double row of teeth running lengthwise, one in one direction, one in the other.[2] Each pair has centre line in common. Style similar to No. **10**, but more advanced, as shown by treatment of neck, where it joins body, and by joints of legs.[3]

Type c.

12. Horse with base. Found east of Northwest Building, 1895. Legs broken. Solid. Height, 0.0765 m. Length, 0.069 m. Length of base, 0.048 m. Width (front), 0.0165 m. Width (back), 0.0185 m. Body rather short. slightly almond-shaped. Crupper fairly high, Legs long. Shoulders and hind quarters carefully distinguished from body. Hocks indicated by slight projections with notch above. Tail curves outward and is attached to base. Legs undercut at body, more behind than in front. No mark of sex. Mane not indicated, but there is high forelock and crest, which with part beneath was probably conceived to be covered with hair. Crest undercut above nose, which is nearly round. No mouth or eyes visible. Lumps at side of head are ears. Base plain on top; bottom divided into two rectangular fields of about equal size, each surrounded by a rim. In left field, under hind legs, lion in relief to right with tail over back. Above neck, indistinct object, possibly upper part of a man. In right field a horse to left, moving. No details given, but head and body long, neck short, tail hangs straight. Above horse, a lizard (probably), to right. In upper right corner a serpent (perhaps) rampant. In this base and in that of the others, except No. **15**, technique is that of carved design (probably in wood) impressed on clay model. This horse is a further development of type of Nos. **8** and **9**.

[1] Cf. *Olympia*, No. 213 a.

[2] Cf. *Olympia*, No. 217 a.

[3] Similar, but with flatter legs, *Olympia*, No. 200.

Type d.

PLATE LXXIII.

13. Horse with base. Provenience unknown. Tail broken. Solid. Height, 0.066 m. Length of base, 0.0485 m. Width (front), 0.024 m. Width (back), 0.026 m. Body short. Slightly almond-shaped. High crupper. Neck attached angularly, but not as sharply as in No. **12**. Shoulders not sharply differentiated from body. (Cf. No. **11**.) Left hind quarter distinguished a little more carefully than right. Knees shown by sudden narrowing in front, as though part of leg were cut out. Hocks given in same way. No feet. Undercut between fore legs up to line of body, square across. Partially undercut at back, especially between legs, which are wide apart, and under tail. Uncertain whether sex was indicated. Tail attached to end of base. On right side of neck a little back of centre, two concentric circles. Between this and head, traces of double line of dots across side of neck. Close to head similar line running across neck. Below circles a line of dots which does not at either end come to edge of neck. Beneath it, three other parallel rows. In front, the ends connected by irregular convex line of dots. At the back, first and second lines are connected square across. Connection between other lines doubtful. At right of rings there seems to be a broad zigzag connecting the lines at top and lower part of neck. On left side of neck, double row of dots just below ears. At bottom of neck another double row. Above second row, a wavy row. Across middle of neck, an indistinct pattern, perhaps a zigzag, in middle of which and of neck, a punch-mark, around which a small ring. Between right side of this zigzag and lines at top of neck apparently a similar irregular zigzag. No indication of mane.[1] Nose long and cylindrical. Mouth indicated. Right eye shown by dot and circle. No certain trace of left eye. Right ear has engraved line down centre. Left ear has two such lines. Crest between ears. Base appears to have line of dots down both sides on top, near edge. Between front and back legs, cross of a double line of dots. At back, between tail and left side, double row of dots about 0.0015 m. apart. Bottom of base divided by raised line into two rectangular fields, surrounded on front and sides by a double raised frame. At back, single frame, from tail to bottom; none above. In left field under hind feet, horse standing to right with neck, head, and ears fairly natural. Above horse, in field, indistinct animal, showing head, four legs, and short tail. In right field, a lion to left walking, with tail curled over back; mouth open. Eye represented by knob in relief. End of tail bushy. This horse unites severe and milder types (**a** and **b**) before described. More advanced in technique, but in spite of certain softnesses, clings tenaciously to style as against nature.

Type e. Early naturalistic and transitional.

14. Horse. Found under Cyclopean wall above the east end of Stoa, 1893. Condition very poor. Base broken off in cleaning. Legs and tail gone. Solid. Height with base, 0.041 m. Length of base, 0.044 m. Width of base, 0.02 m. Body long; nearly cylindrical, though slightly narrower in upper part. Crupper fairly high. Hock shown in left hind leg, marked by bend, and clearly defined exterior angle. Left knee indicated by bend and slight swelling. Body roughly undercut between legs. No indication of sex; probably female. Neck attached to body at obtuse angle with easy curve; about cylindrical. No mane. Top of head and face a triangle. No trace of eyes, mouth, or ears, due probably to bad preservation. Base plain on top. Bottom ornamented with parallel rows of arrowheads in relief running toward back, the whole inclosed by raised frame which forms outer edge of base. This animal is of geometric style, as base and undercutting between legs show. Body, shoulders, hips, and legs are of **Type b**. The neck is devoid of style and convention and more naturalistic. The head excessively rude and clumsy. The piece is probably as early as Nos. **8** and **9**, and earlier than Nos. **10** or **11**. In view of the radical stylistic characteristics of even the earliest and rudest geometric work, it is better to regard it not as preparatory to the geometric period but as the outgrowth of coexistent naturalistic tendencies.[2]

15. Horse with base.[3] Provenience unknown. Preservation fair. Solid. Height, 0.028 m. Length, 0.042 m. Length of base, 0.0305 m. Width of base, 0.015 m. Body somewhat ovoid in profile; rather long. Slopes from neck to tail.

[1] For body, neck, and legs, cf. *Olympia*, No. 200 a.

[2] No clear stylistic parallel from Olympia. The nearest, *Olympia*, No. 163, having flat neck and other characteristics of geometric style clearly indicated. For style of base, cf. *Olympia*, No. 217 a.

[3] Base, PLATE CXXXVII.

No crupper. Legs short and thick. No shoulders, hips, knees, or hocks. Tail descends in curve to base. Body not undercut. Between hind legs remains a wall of metal, though it is undercut or hollowed out a little in front and rear. No sign of sex. Neck a flat ellipse, thinner at back than in front, joined to body at obtuse angle, with easy curve. Head rather flat. Mouth indicated, but not eyes. Ears rudimentary. No mane. Base of flatiron shape, plain on top. Bottom has one lengthwise line a little to right of centre, also some irregular lines at front and back and irregular diamond pattern at centre. Head, back, and body of free geometric style. Neck shows naturalistic influences. Base probably geometric, although the rude engraving might belong to any time.[1]

16. Horse with base. From Northwest Building, 1894. Bits of legs and tail broken off. Solid. Height, 0.03 m. Length, 0.055 m. Length of base, 0.032 m. Width, 0.016 m. Body short and cylindrical, swelling quickly into shoulders and hips. Crupper high and round. Shoulders and hips attached as in Nos. **10** and **11**, but more freely. Hips light as compared with shoulders. Knees shown by bend; hocks indicated plastically. Body not undercut in front, but cut out broadly between hind legs. Sex not shown. The animal is shown as looking forward and down. Neck nearly cylindrical. Ears project forward and up. Eyes formed by two holes close together. Mouth open, and on left side are notches, probably to imitate teeth. Notches not so plain on right. Upper side of base plain. Bottom ornamented with transverse zigzags arranged to make double line of arrowheads. No border. Base is geometric; body and legs also of less severe type (**b**). Neck and head naturalistic.[2]

PLATE LXXIV.

17. Horse with base detached. Found below east end of Cyclopean wall, 1893. Legs and tail broken, stubs remaining on base. Badly preserved. Solid. Height, with base, 0.068 m. Length of base, 0.0515 m. Body cylindrical, but short. Crupper fairly high. Neck attached angularly. Fore quarters heavy, showing considerable attempt to imitate nature. Hind quarters lighter. Hocks carefully modeled. Body not undercut in front, and but slightly between hind legs. Sex not indicated. Neck flat, but not thin; only slightly curved. Mane not indicated. Head short. Eyes shown by two holes[3] bored from sides. Beneath eyes and running back are the ears. Upper side of base has row of dots at back near edge, and apparently a double row on right side. Bottom divided by line made by cutting either side of it into lengthwise fields, each of which is engraved with two parallel zigzag lines. These lines produce effects of zigzag in relief, with line of tooth-ornament also in relief at either side. In this figure the freer and more natural shape of body and shoulders, lack of undercutting, and greater thickness of neck are marks of emancipation from the geometric style, which, however, is still shown in the base, and in the flatness of neck.

NATURALISTIC STYLE.

PLATE LXXIV.

18. Horse (uncertain whether originally with base). Provenience unknown. Ears, legs, and tail broken. Solid. Height, 0.057 m. Length, 0.08 m. Body full, tends to cylindrical form. Back terminates in ridge from tip to tail. Body long, crupper slight. Shoulders slight, but full in front. Hips carefully marked. Hock indicated. Cut roughly between hind legs, but not undercut. No mark of sex. On middle of back two short cuts, and three at base of neck, which is short and thick. Neck thicker behind than in geometric types, and has sort of dewlap in front. Head short and thick. Eye indicated by circle. Forehead between eyes high, and marked by arrowhead over nose. This animal shows no true geometric influence, but imitates nature in manner of early archaic period, scarcely any detail being correct.

2. DEER.

GEOMETRIC STYLE.

Type a. Rigid.

PLATE LXXIII.

19. Deer with antlers, on base. From northwest corner of West Building, 1894. Fair preservation. Solid. Height, 0.0525 m. Length, 0.037 m. Length of base, 0.021 m. Width of base, 0.0135 m. Body short and rather flat.

[1] Cf. animals of so-called terra-cotta style; *Olympia*, Nos. 128, 130, 135, etc.

[2] Style not paralleled at Olympia, but cf. with *Olympia*, Nos. 181 ff., regarded by Furtwängler as geometric of exceptional naturalism. For base, cf. *Olympia*, No. 217 a.

[3] Now appear as groove, owing to bad preservation.

Slight rise over hips. Legs flat, and slightly wider at top to indicate shoulders and hips. Knees and hocks unindicated. Legs undercut, but not deeply. No mark of sex. Ears and mouth not shown. Uncertain whether eyes were represented. Horns rise in upright branches, each having short projecting prong near top and longer prong at bottom. Rectangular base, worked to represent frame, inclosing zigzag shaped like a three-stroke sigma. Body, neck, and legs indicate geometric style of severer type.

Type b. Less rigid.

20. Deer with base. From northwest side of Upper Terrace, 1891. Fair preservation. Solid. Height, 0.041 m. Length, 0.045 m. Length of base, 0.029 m. Width of base (front), 0.0165 m. Width of base (back), 0.018 m. Body nearly cylindrical at shoulder. Slopes toward crupper like a cone. Crupper high and pointed. Upper front legs heavy. Hips not shown. No undercutting, but legs well separated. No mark of sex. Neck (almost cylindrical) rises nearly straight, but increases slightly toward head and body. Head broad and flat. No ears or mouth. Uncertain whether eyes were indicated. Right horn projects up and back. Left horn broken. Top of base has zigzag across ends and diagonal cross from leg to leg. Bottom has rudely cut intaglio figure of uncertain significance, around which is a zigzag. Neck, body, and hind legs mark less rigid type.

EARLY NATURALISTIC STYLE.

PLATE LXXIV.

21. Deer (uncertain whether with base). Found 1891. Condition poor. Solid. Height, 0.096 m. Length, 0.1185 m. Body long and nearly cylindrical, swelling and rising slightly towards crupper, which is long and high. Hind legs are naturally attached. Hock shown by swelling and bend of leg. Front legs drawn up for a spring. Manner of drawing up and attachment of front legs stiff and awkward. Back of front legs are deep holes. Neck roundish. Head roughly triangular. Ear projects straight out, and slightly downward and forward. Eyes set slanting, nearly in line with axis of head, and somewhat protuberant. Mouth probably indicated. This animal falls not far from end of geometric period, of which holes between legs and distance between hind legs are a reminder. Eyes probably also in that style. Remainder of figure naturalistic, but there is a slight stiffness throughout, marking the recent emancipation from geometric forms.[1]

3. SHEEP.

EARLY NATURALISTIC STYLE.

22. Ram (probably) with base. From Northwest Building, 1894. Preservation fair. Solid. Height, 0.014 m. Length, 0.0235 m. Length of base, 0.0145 m. Width of base, 0.0075 m. Body short and rounded, but higher than wide, rather flat on bottom. Legs short, thick, and without joints. No shoulders, but clumsy trace of hips. Crupper fairly high. Neck short and thick; hole through base. No certain indication of mouth or eyes. Not undercut between legs. Hind legs not completely separated. Base plain on top. Below, divided by two engraved lines running lengthwise. Contemporary with geometric work, which is shown by rudeness of base, but rather naturalistic in style.[2]

4. CATTLE.

NATURALISTIC STYLE.

Type a. Geometric influence.

PLATE LXXV.

23. Head of cow.[3] Attached figure. From northwest of West Building, 1894. Condition good (except for loss of left ear). Head solid; neck hollow. Length of top from rim to forehead, 0.0435 m. Length of bottom from rim to nose, 0.0435 m. Attached to slightly convex surface by thin rim at base. Neck of natural shape, lower side representing folds of dewlap. Above, neck distinguished from head by line drawn back of horns, which line forms base of triangle, apex being 0.005 m. from rim. Within triangle are eight lines drawn from base toward apex. Cheeks ornamented with engraved line,[4]

[1] In Brit. Mus., First Vase-room, Case E, is a bronze statuette of goat from Camirus, similar to above specimen, but with geometric elements slightly more marked.

[2] Cf. *Olympia*, No. 214.

[3] Cf. cow in Nat. Mus., Athens, No. 7392. Head shows similar eyes and rosette, but simpler. Bursian and Rangabe found "una piccola testa di bue veduta dalla parte d' innanzi che sembra esser stata affissa a qualche parete a guisa d'anatema." *Bull. d. Inst.* 1854, p. xvi.

[4] Here and elsewhere in this object probably executed in the model rather than in the cast bronze.

close to edge around curve, and by seven lines drawn from it diagonally downward. Ear similar to No. **21**, but hollowed out more on under side. Horns 0.064 m. between tips. Engraved lines on front of forehead continued over top to line behind ears. Eyes set almost vertically. Consist of nearly round ball with oblong lids meeting in acute angles. Between eyes rosette and half-diamond.[1] From lower corners of eyes three parallel lines run toward end of nose. Mouth shown by engraved line. Nostrils shown by curved lines at outer corners of upper jaw and by slight swelling. End of nose covered with irregular punch-marks. On sides of nose one row of marks to show nasal swelling and lower jaw. Length of face, 0.05 m. Geometric influence seen in angular lines of head, eyes, and ornamentation. Modeling and style naturalistic.

Type b. Geometric and Oriental influence.

24. Bull. From Northwest Building, 1894. Legs broken. Solid. Height, 0.033 m. Length, 0.0685 m. Body modeled with skill and fidelity to nature. Knees and hocks indicated. Shoulders indicated by bands running toward middle of back. Hips more successful, though too prominent. Left fore leg ends in swelling, which was probably attached to base. Hind legs perforated lengthwise, just back of and above hock. In left leg the pin remains by which leg was fastened to base or other object. Tail bent under. Dewlap carefully modeled. Head distinguished from neck on top by ridge of horns. Horns 0.021 m. between tips. Between them, in front, engraved[2] lines. Eyes vertical, made by punched ring. No ears. Nose and mouth carefully modeled. Above end of nose, two engraved lines cross face. Nostrils shown by swelling and on end of nose by slight oblong holes. The eyes and engraving are geometric. Term Oriental is here used for a certain softness of modeling found in figures of animals, especially lions (cf. Nos. **29**, **720**, **946**), which belong to species which began to be employed after Oriental designs had been introduced. Neither technique nor subject is due to that influence.[3]

Type c. Oriental influence (to be understood as above).

25. Head of ox or cow. Attached figure.[4] From south slope, southwest corner, 1895. Preservation fair. Solid. From behind seems to be cast in two pieces, but welding so skillful that this does not show in front. Length, 0.052 m. Width, 0.088 m. Height, 0.0525 m. Horns between tips, 0.043 m. Attached to convex surface by triangular plate. Holes for fastening at corners. Around the edges is lead. Short neck, nearly round, but broader in upper part. No dewlap. Head not distinguished from neck, except by horns and nose. From top of forehead, between horns, hangs sort of forelock: height, 0.014 m.; width, 0.0175 m. Horns curl forward and slightly upward. Eyes very conventional, indicated merely by slightly oblong swellings. No mouth or nostrils. No trace of geometric influence. Naturalistic style, but conventionalized for decorative purposes.

Type d. Naturalistic.

26. Cow, uncertain whether originally with base. Found 1892. Preservation poor. Solid. Height, 0.074 m. Length, 0.113 m. The animal was shown as walking. Body, legs, hips, and shoulders rendered with skill and fidelity to nature. Knees shown by carefully modeled swelling. Hocks by modeling. Neck slightly convex on top, full and deep, with carefully modeled dewlap. Horns short, curved out and up. Ridge between horns engraved in front and on top with fine wavy lines. Eyes made with simple punched circle. Over the eyes are swellings of frontal bone, each with two engraved lines in plane of face. Between these, rosette of fine lines radiating irregularly. Nostrils indicated by two slits. Mouth closed. This cow shows entire freedom from conventionality or stylistic influence and is based simply upon study of nature. It is somewhat plainer than No. **27**, especially in treatment of neck, and does not show quite the same sureness of technique.

27. Cow, without base. From south slope, 1895. Condition poor. Legs, tail, ears, and horns broken. Solid. Height, 0.111 m. Length, 0.217 m. Body somewhat long, but modeled after nature with care and skill, as seen in treatment of shoulder-blades, hips, and flanks. Knees indicated by swelling; hock by careful modeling. The tail broader at top than bottom. Upper part perhaps engraved. Bag large. Neck high and narrow. Dewlap carefully rendered, with clearly marked folds, reaching on right to

[1] Mr. D. G. Hogarth suggests that the engraving represents ornamental fillets and frontlet for sacrifice.

[2] As No. **23** (p. 201, note 4).

[3] For a somewhat different view, see Bather, *J. H. S.* XIII. (1892-3), p. 232.

[4] Cf. *Olympia*, No. 877.

line between ear and mouth. On back of neck, irregular marks and indentations, possibly of an inscription. Between horns in front and on top of head, engraving to represent hair. Transition from ridge of horns to face better than in No. **26**. The ears were correctly placed. Eyes consist of two curves, the upper larger, its arc passing that of the lower at lower corner of eye. Ball of eye rounded. Length of eye, 0.006 m. Width, 0.005 m. In front of eyes, prominent folds of skin, marked also by two engraved lines. Between eyes, rosette of convex-concave lines radiating from centre. Nostrils and upper lip indicated and with great care. Mouth closed and indicated by line on back side of face as in No. **26**. Distinction between head and neck along angle of jaw modeled without any harshness. Mistakes shown in this part of No. **26** avoided. Animal was represented moving, probably walking. Of early part of classical period.

28. Foot of ox or cow. From south slope. Badly oxidized. Solid. Length, 0.047 m. Hoof broad and flat. Probably cloven, though slightly. Above hoof, concave band, running all round. Above this, raised ring around three sides, terminating in low protuberances, higher up on one side of leg than on the other. Probably left leg. Lower part at very low angle, suggesting rearing animal or animal crushed. Work of good period.

5. LIONS.

NATURALISTIC STYLE.

Type a. Oriental influence.

PLATE LXXVI.

29. Lion on base, to which is attached long iron bar. Provenience unknown. Condition fair. Cast hollow and bar inserted. Height, 0.186 m. Length of bar, 0.134 m. Length of figure, 0.035 m. Width of bar at top, 0.0165 m. Thickness, 0.0075 m. Lion seated upright, tail over back. Body simple but correct. Hips prominent. Paws heavy and toes marked. Tail indicated by ridge along back. Breast and neck marked off by heavy modeling of neck along line drawn from front legs over shoulders to tip of tail. No mane. From ears to lower edge of lower jaw is a raised ring; this is flattened below ears and heaviest back of mouth. Ears slightly indicated. Nose and eyes marked off from top of head by raised modeling of latter between ears. Eyes set at upper back side of large sockets, which are wide and deep in front of eyeball. Nose short and thick; no nostrils. Mouth open, showing four teeth at corners. Front and hind legs connected by flat base that hides the insertion of bar. Upper part of base projects over lower, forming sort of cornice. The iron bar much corroded, and shape thereby altered. It seems to have been inserted into some wooden object, such as staff or sceptre. Style in general true to nature but somewhat conventionalized for decorative purposes. Modeling soft; all sharp outlines avoided.[1]

Type b. Purely naturalistic conventionalized for decorative purposes.

Pin-head, No. **720**, and attached figure, No. **2204**.

6. RODENT.

NATURALISTIC STYLE — DECORATIVE.

30. Mouse on human right forearm attached to iron rod. From West Building. Condition fair. Arm cast hollow for insertion of rod. Entire length, 0.114 m. Length of mouse, 0.034 m. Height of mouse, 0.021 m. Mouse crouches on upper side of arm, tail extended toward hand. Body full and rounded. Hindquarters shown with low modeling. Shoulders scarcely indicated, toes not at all. Head separated from body by low groove. Cheeks full. Ears drawn back over groove in neck shown in low relief, slightly undercut. Eyes round, slightly raised. Mouth indicated. Arm and hand less carefully done; wrist poor. At junction with rod a raised ring circ. 0.004 m. broad, rudely done. Hand closed. Fingers poor, and no nails. Through hand passes round hole in which was once some object held by the hand. Shape of iron rod uncertain, but probably rectangular.

7. FROG.

NATURALISTIC STYLE — DECORATIVE.

31. Provenience unknown. Condition poor. Feet broken and surface abraded. Solid. Length, 0.046 m. Length of tail, 0.009 m. Figure worked only on back and sides, flat below. Body tapers slightly to waist, between which and lower hind legs two wrinkles on each side. These form the hips. No details except engraved[2] lines diagonally over ends of legs, perhaps to indicate toes. Head flattened from back to front. No mouth. Eyes oblong and raised. Round hole pierced through tail. — Much con-

[1] For another example of this type, cf. fibula, No. **946**.

[2] Cf. No. **23** (p. 201, note 4).

ventionalized for decorative purpose. Perhaps attached or suspended by hole in tail.[1]

8. SERPENTS.

GEOMETRIC INFLUENCE — DECORATIVE.

32. Head attached to bronze tube. Provenience unknown. Condition fair. Hollow. Length, 0.052 m. Diameter of tube inside, 0.0095 m. Head shaped like truncated cone, but top slightly convex. Corners on lower side beveled. Bottom and sides plain. Mouth given by straight line. Eyes of two concentric circles, above which raised lid inclosed by two lines. Top of head engraved with double crescent at back and down centre oblong ornament of two elliptical lines. Space between the parallel lines engraved with oblique strokes, giving rope effect. Midway between eyes and end two crescents open outward, one on each side. They are formed of two lines running to edge of top. Mouth round. Head and tube hollow for passage of water, forming small spout.

33. Serpent, attached. From back of South Building. Preservation good. Length, 0.1215 m. Width, 0.045 m. Body and lower neck plain. Nine lines on upper neck. Head tapers to a rounded point and flattens from back to front. Sides and bottom of head plain. On top, four half-circles, turned outward, two on each side. Each consists of two lines. No indication of mouth. Probably not much of original figure lost, as serpent seems to have been intended to project from behind aegis or part of clothing of statue, e. g. Athena. Technique (hammering) and engraving are geometric, but figure is probably not of geometric period, but of archaic art.

NATURALISTIC STYLE.

Type a. Decorative.

34. Head of serpent. Formerly attached. Provenience unknown. Preservation poor. Length, 0.0265 m. Sides and bottom plain. Ridge along top. Traces of two circles near mouth, one on each side. Probably not meant for eyes. Mouth large and open. Line round inside of lower jaw, probably only fissure in bronze. Hollow. Served as spout.

[1] Cf. Fränkel, 'Geweihter Frosch,' *Jahrb. d. Inst.* I. pp. 50 ff. Somewhat similar is *Brit. Mus. Cat. of Bronzes*, No. 1902.

[2] For use, cf. *Olympia*, No. 816 a, De Ridder, *Bronzes de l'Acropole*, No. 558. Projecting protome, probably from ring of support of kettle. Cf. also Brit. Mus., Bronze Room, Centre Cases C.: circular bronze dish; on handles male and female figures reclining; four serpents attached beneath rim, with heads projecting over rim toward inside. Castellani (1562).

Type b. Purely naturalistic.

35. Serpent. Provenience unknown. Body broken close to neck. Preservation poor. Solid. Length, 0.04 m. Neck and body plain. Head broad and flat and at back stands out prominently from neck. Eyes prominent, set at forward corners of rectangle of head. Probably formed by single ring, over which rises the puffy eyelid. Mouth open. Line round inner edge of upper jaw. Probably work of archaic or classical period.[2]

9. BIRDS.

GEOMETRIC STYLE — CONVENTIONALIZED.

I. AQUATIC.

Type a. Geometric.

36. From West Building, 1893. Condition fair. Solid. Height, 0.0525 m. Length, 0.036 m. Body flat, plain underneath. On top slightly rounded. Legs bend slightly forward, are plain, and of uniform size. Neck rises from lower edge of body. At base of neck, hole, for suspension, 0.003 m. in diameter. Head about at right angles with neck. No eyes or mouth. Probably had base, to judge from roughness at end of left foot.[3]

37. Bird on standard. Probably originally on base. From below Cyclopean wall and above Stoa. Preservation poor. Legs and standard broken. Head and tail damaged. Solid. Height, 0.036 m. Length, 0.034 m. Adjoining legs, but separate, a round standard. It is placed between legs, slightly forward, and comes through to upper side of back, where it is raised slightly above surface. Legs straight and round. Neck somewhat elliptical. Probably had no eyes.

38. Bird on standard. Probably ornamental stud or nail, but possibly attached to base. Uncleaned. Preservation bad, and badly oxidized. Solid. Height, 0.036 m. Length, 0.027 m. Height of standard, 0.0195 m. Round body, like nail-head, with narrow extension at back, which may be either body or tail. Eyes marked by two pointed projections. From eyes, head sharpens to point, in three planes on upper side and one convex plane below. No decorations. Shape of neck and addition of eyes mark this as more advanced than preceding number.

[3] For style (flat wide tail and beak, and long legs), cf. *Olympia*, No. 210, with base.

39. Complex of two birds, attached to base. Found in bank, east of chambers (III), just above poros wall, 1894. Preservation fair. Base rough at back as though broken. Solid. Height, 0.036 m. Length, 0.041 m. Length of base, 0.028 m. Width of base, 0.0055 m. So constructed that right legs, which are very large, serve as standards, keeping the poise of whole figure, and left legs and bodies so combined that bodies seem to be a continuous bar attached to short left legs; portions of bar belonging to each, marked by obtuse angle close to right leg of rear bird. In front figure, bar projects nearly to front of right leg. Heads have small projections for eyes. Beaks rounded, slightly thicker than wide. Base rectangular. Has round hole, 0.0123 m. from front end, 0.0019 m. in diameter. Seems like hole for suspension, but slant of figure toward left makes possible to drive nail through from right side.

40. Bird with base. Provenience unknown. Preservation good. Solid. Height, 0.035 m. Length, 0.0325 m. Height from centre of base to centre of body, circ. 0.025 m. Base, 0.013 m. square. Body has hole diagonally through from base of neck to front just above standard. Diameter, 0.0018–0.003 m. Back of body shows two bands of two lines each, on top and sides. Base of head, similar band of two lines. Tail fan-shaped; nicked along back edge. Head flat but slightly rounded. No eyes or other details. Standard ornamented with three raised rings just beneath body. Below these, rounded swelling. Line of top of base projects slightly, forming ridge, and on bottom is indented square, circ. 0.007 m. on a side. Outside this, another square. Space inside smaller square sunk more deeply than space between squares. First example so far with ornamentation, though form is very primitive or conventionalized.[1]

41. Bird on standard, probably originally with base, similar to No. **40**. Provenience unknown. Badly preserved. Solid. Height, 0.032 m. Length, 0.024 m. Body shows no details, but seems to have had three lines at top of neck. Similar ornament perhaps, at base of tail. Hole in neck, similar to preceding. Standard has narrow swelling immediately beneath body, followed by a wide, full band. Probably belongs with preceding, though shape of head may have been different.

[1] Cf. *Olympia*, No. 418.

PLATE LXXVII.

42. Bird with base, which is circular and perforated. Provenience unknown. Preservation fair. Solid. Height above base, 0.04 m. Diameter of base, 0.028 m. Hole in neck of bird. Diameter, 0.0045 m. Body has prominent breast, but short back. Eyes prominent. Bill long and clearly marked. Standard nearly round. Base flat on top, but slightly hollowed below, leaving uneven rim around the edge. Neck, eyes, head, and bill the most advanced so far. In these points and in short body resembles No. **38**, in which, however, body has different shape.[2]

43. Bird with standard, resting on perforated circular base. Provenience unknown. Preservation fair. Base less well preserved. Solid. Height, 0.04 m. Length, 0.042 m. Length from neck to end of tail, 0.0265 m. Diameter of base, 0.035 m. Diameter of hole in body, circ. 0.004 m. Prominent breastbone. Body tapers above and below toward tail. Standard circular, swelling where it joins base, which is plain on top, and below, the rim taking form of a roll.

Type b. Naturalistic influence.

44. Duck. From cutting at east end of Upper Temple, toward the tents. Preservation fair. Cast hollow. Height, 0.019 m. Length, 0.045 m. Body rounded, of natural shape. Wings indicated by line down back, from upper end of which, 0.05 m. from base of neck, are drawn lines to show curve of wings. Curve of neck slightly stiff and too small. Eyes almond-shaped, slightly convex, surrounded by engraved line. Bill rather flat. Inside, partially filled with some dark substance, uncertain whether core or dirt. Behind hole in breast are shown the flippers. No certain mark of attachment below, though less carefully finished. Work of considerable skill. While more naturalistic than geometric, belongs to a period before naturalism became a style.

II. LAND-BIRDS, CHIEFLY COCKS.

Type a. Purely geometric.

45. Body of bird. Solid. Provenience unknown. Badly preserved. Head, neck, legs, and tail broken. Solid. Height, 0.014 m. Length, 0.0425 m. Tail spade-shaped. Resembles more a peacock with folded tail. More primitive than No. **46**, as shown by rectangular lines of body and neck.

46. Cock. Provenience unknown. Preserva-

[2] With this and No. **43**, cf. *Olympia*, No. 210 b, which has round perforated base and is also similar in style.

tion poor. Solid. Had no legs, but possibly standard, through vertical hole in body. Height, 0.023 m. Length, 0.039 m. Diameter of hole, on top, 0.003 m. Neck deeper than wide. On both sides of comb, circle inclosing dot. At base of comb, two parallel lines. Eyes uncertain, but probably given. Each side of tail has two circles surrounding dots.[1] At base of tail, four lines of engraving on each side. Neck better than No. **47**, but body less good. Probably had no standard, but was a pendant.

47. Cock. Provenience unknown. Preservation poor. Ring or contrivance on back broken. Large irregular hole in left side of body, showing inside to be hollow. Height, 0.055 m. Length, 0.0995 m. Height of body and knot on back, 0.026 m. On top of body, vertical hole, 0.002 m. in diameter, through to interior. In middle of back, piece of uncertain purpose, perhaps part of suspension ring. Legs about 0.008 m. long. Bottom slightly concave. Body rises at either end in two spouts toward neck and tail. Not certain whether hollow entire length. On inside, reed or tongue-like strip of metal, 0.0035 m. wide, and 0.0004 m. thick, projects from about centre of right side horizontally across body. At base of tail, two raised rings. Length of tail, 0.032 m. Ornamented on each side with five sets of concentric circles, three of which are larger, and consist of small round hole, surrounded by two circles, the outer fainter than the inner. Above these, a dot surrounded by circles. Upper circles are fainter than lower. At upper end of neck, two raised rings. Eyes raised. Beak round and tapers to point. Convex above, concave below. On each side of comb, dot inclosed by two circles, as on tail. Between these and top of comb, on each side, five dots each in circle.

Type b. Naturalistic influences.

48. Cock. Provenience unknown. Condition rather poor. Probably hollow, as it seems too light for solid mass. Height, 0.0445 m. Length, 0.0472 m. Body rounded, broad across bottom, pot-shaped. On back, sort of dowel, which seems to have terminated in an eye, now broken. It seems to have been let into the body, not cast with it. On right side of body two dots, each surrounded by circle. Same on left, where between circles is pierced hole. On lower part of breast, to right and left of legs, two similar dots and circles. At rear end of body, in centre, a similar dot and circle. Straight legs attached to outer corners of body. Bottom of feet slightly concave. Lines on outer side of legs. Two lines on back end of body on right side, run from circle toward base of tail. Similar on left side. Round base of tail on body, four lines, discernible on right; faint traces on left. Tail semicircular. Each side has three dots inclosed by circles. Lines from base of neck run diagonally, three from one side and two from the other, joining on centre of breast. Beneath these another line on each side. Top of neck on right side has traces of three lines. Eyes round projections. Not certain whether originally had comb. Body and legs show advance over No. **47** in naturalism. Neck, head, and tail as good. Ornamentation rather more elaborate.

NATURALISTIC STYLE.

Type a. Geometric influence.

49. Tail of bird. Provenience unknown. Preservation fair. Solid. Extreme length, 0.053 m. Width, 0.052–0.089 m. Thickness, 0.004–0.0065 m. Upper side slightly convex in both directions. At end, nine scallops. Perforated near centre, toward base. Upper side engraved with two lines of feathers, ending in before-mentioned scallops. Engraver worked from left to right, as shown by miscalculation for commencement of dividing line between feathers of back row. Each feather divided by quill; sides engraved with slanting lines. Geometric influence in stiff angularity in form and decoration.

Type b. Naturalistic.

PLATE LXXVIII.

50. Head and neck, probably of swan. Provenience unknown. Preservation fair. Solid, except for depth of 0.022 m. from lower end. Height, 0.098 m. Length, 0.092 m. Circumference of neck at base, 0.096 m. Neck without ornamentation. Head differentiated plastically from neck. Sides of head concave in region of eyes. Eyebrow projects sharply. Top of head somewhat concave, especially between eyes, and narrows rapidly from back to front. Eyes, in clearly marked sockets, consist of elliptical ring rising from bed of socket. Inside ring, prominent eyeball. Projecting corners of head above eyes distinguished as eyebrows plastically and by engraving. Fleshy parts of head separated from bill, on under side, by depression of plane for the bill and slight change in direction. On sides of head, distinction is made by a band, separated from behind by engraved line and in front by a difference of plane. Feathers on head indicated by engraving. Toward back they are fainter than in front. They are not perfectly regular in shape, size, or arrangement. Bill is modeled with care. Upper and lower mandibles separated by sharply marked groove. Nostrils suggested by bulge. On lower half of upper surface of bill, on each side, are two or three very shallow, slightly diagonal grooves. Work of severe style, of much skill and care; probably late archaic or transitional, possibly of early classical period.

PLATE LXXVII.

51. Feather of bird. From West Building. Preservation fair. Solid. Length, 0.074 m. Back and sides plain. Divided into three divisions, which taper to tip, two outer divisions sloping slightly inward. Three divisions covered by cross-lines. Belongs probably to archaic period.

[1] Owing to frequency of this decorative motive in early Greek and other arts, it would form here, as well as in Nos. **47**, **48**, an unsafe basis for identification with peacock. Cf. Hehn, *Kulturpflanzen und Hausthiere*[8], pp. 342 ff.

IV. ORNAMENT AND TOILET

1. PINS.

A. STRAIGHT.

Type a. Simple, plain head.

Pins of this type sometimes difficult to distinguish from ends of spits. Head and body one piece of metal.[1]

FORM 1. BODY ROUND THROUGHOUT. HEAD A SIMPLE KNOB.

PLATE LXXVIII.

52. Provenience unknown. Preservation fair. Length, 0.0838 m. Head oblate. Sides roughly rounded. Head separated from body by shallow groove. Point dull.[2]

FORM 2. BODY RECTANGULAR IN UPPER PART, ROUND BELOW. HEAD SIMPLE ANGULAR KNOB.[2]

Class α. Undecorated body.

53. Well preserved. Length (as bent), 0.08 m. Round part begins 0.005 m. from point, which is dull. Neck slightly pinched in.

54. Point broken. Length, 0.111 m. Round part begins 0.09 m. from head. Head flat on top, perhaps broken. Neck sharply pinched in.

55. Poor. Broken and oxidized. Length, 0.06 m.

56. Poor. Broken and oxidized. Length, 0.185 m. Head pointed at top.

57–61. Heads blunt. All are poor, being broken and oxidized. Length, resp. 0.235, 0.142, 0.141, 0.18, 0.232 m.

Class β. Rectangular part of body decorated.

62. Point gone; upper part oxidized. Length, 0.123 m. Decorated probably with zigzag on all four sides.

63–66. Similar to No. **62**. Lengths, 0.116 m.; 0.222 m.; 0.06 m.; 0.0915 m. No. **63** from back of South Building, No. **66** from West Building.

67. Point gone. Oxidized. Length, 0.22 m. Rounds circ. 0.037 m. from head. Transition plain and abrupt. On all four sides decorated with zigzag.

68. Point gone. Oxidized. Length, 0.083 m. Rounds gradually circ. 0.043 m. from head. Collar at top of body. Broad zigzag on all four sides.

69. Point gone. Oxidized. Length, 0.099 m. Rounds gradually. Zigzag on all four sides. Collar as in No. **68**.

70. Point gone. Oxidized. Length, 0.104 m. Rounds abruptly. Zigzag on all four sides. Collar as in No. **68**, color medium.

71. Point gone. Much oxidized. Length, 0.068 m. Rounds abruptly at 0.029 m. from head. Zigzag on all four sides. Small collar.

Class γ. Rectangular and round part of body decorated.

72. Point dull. Condition fair. Length, 0.168 m. Rounds at 0.117 m. from head. Traces of zigzag on upper part on all four sides; round part engraved to represent broadly threaded surface; the threads break irregularly.

[1] The simple-headed pins from Troy, No. 4339, Athens Mus., Schmidt, *Schliemann's Sammlung Trojan. Alterthümer*, Nos. 6262 ff., are not exact parallels to this type, but are, for the most part, ruder and more primitive.

[2] Cf. Schmidt, *op. cit.* No. 6266.

[3] With this form compare an Italic type with round shaft ornamented with two rings near head; Montelius, *Civ. Prim. It.* pl. 42, 7 (col. 229), from Monenuco near Como. For heads, cf. Schmidt, *op. cit.* Nos. 6321 ff., and note 1 above.

73–86. Fragments resembling No. **72**.[1]

FORM 3. HEAD WITH ORNAMENTAL CONTINUATION ABOVE KNOB. EXAMPLES UNCERTAIN.

87. End broken. Oxidized. Length, 0.104 m. Rounds abruptly at 0.03 m. from neck. Zigzag on rectangular part. At transition to round part, three fine lines. Collar at neck. From head rises short point like end of wire; if due to corrosion, probably not a pin.

88. Broken and oxidized. Length, circ. 0.023 m. Rectangular body with collar. Uncertain whether ornamented. Above head, tapering blunt stub, as in No. **87**.

89. Broken near head. Oxidized. Length, circ. 0.038 m. Body round, with collar. Not decorated. Head oblong spheroid. Small stub of uncertain character above.

FORM 4. KNOB REDUCED TO THICK DISK, WITH COLLAR ABOVE AND BELOW.

90. End broken. Oxidized. Length, 0.0545 m. Above and below head, collar. Above upper collar, short rounded stub.

91. Similar to No. **90**. Length, 0.147 m.

FORM 5. HEAD TRUNCATED CONE. BODY CORRUGATED IN UPPER PART. HEAD CONICAL.

92. End gone. Much corroded. Length, 0.0455 m. Top of head uneven. Sides concave. Body has four corrugations of different sizes in upper part.

93. Uncleaned. Length, 0.076 m. Head a low cone. Beneath head, two corrugations.

FORM 6. WIDE, FLAT HEAD.

94. From south slope. Somewhat oxidized. Length, 0.09 m. Head slightly concave. On inside line of engraving from bottom upward.

Type b. Flat head, corrugated or beaded body. Head small and rather thick. Usually appreciably larger than body. Sometimes not. Some possibly headless.[2]

FORM 1. TWO BEADS.

95. Head probably gone. Otherwise condition fair. Length, 0.1095 m. Below beads, rectangular block surmounted by low collar. Point sharp. Filed; color medium.

FORM 2. THREE BEADS.

Class a. Headless, by accident or design.

96. Point gone. Corroded. Length, 0.527 m. Filed; color medium.[3]

97. From back of South Building. Length, 0.10. Commencement of body rectangular. Point sharp. Filed; color medium.

98. End gone. Much corroded. Length, 0.0475 m. Top uneven. Sharply defined rectangular block with heavy collar. Filed; color slightly reddish.

Class β. With heads.

99. Point gone. Oxidized. Length, 0.114 m. Body round from start. Color light. Head has form of half corrugation.

100. End gone. Corroded. Length, 0.047 m. Diameter of head, 0.0069 m. Color medium, with trace of red.

FORM 3. FOUR BEADS.

Class a. Without heads.

101. End gone. Length, 0.058 m. Clearly marked rectangular block.

102. End gone. Somewhat corroded. Length, 0.045 m. Upper bead complete. Sharply defined rectangular block with collar.

Class β. With heads.

103. Head mostly destroyed. Length, 0.113 m. First corrugation slight, with long neck above. Clearly marked rectangular block with collar.

104. Much corroded. Length, 0.0265 m.

105. End gone. Oxidized. Length, 0.0805 m. Diameter of head, 0.008 m. Beads uneven in size.

106. Oxidized. Length, 0.064 m. Diameter of head, 0.007 m. Color medium.

107. From south slope. End gone. Somewhat oxidized. Length, 0.076 m. Diameter of head, 0.0085 m.

108. Corroded. Broken. Length, 0.048 m. Diameter of head, 0.008 m.

109. From south slope. Broken. Length, 0.036 m. Diameter of head, 0.0085 m.

110. From cutting east of Upper Temple toward tents. Broken. Length, 0.048 m. Diameter of head, 0.0085 m.

111. Broken. Length, 0.0415 m. Diameter of head, 0.0085 m. Edge of head grooved.

[1] No. 73 from upper terrace toward tents; Nos. 75 and 86 from south slope.

[2] Cf. headless ivory pins from Mycenae (outside of tombs), with corrugations, No. 2565, and from Tiryns, No. 1646; also from Troy, No. 4413. Those under No. 1060 (outside of tombs) have three to six corrugations. All in National Mus. at Athens.

[3] Cf. somewhat similar pin, Montelius, *Civ. Prim. It.* col. 177, pl. 32, fig. 5. The Italian specimen has no block, but appears to have slight ornamentation of shaft; Bronze Age.

112. From south slope. Broken. Much corroded. Length, 0.045 m. Head small.

FORM 4. FIVE BEADS.

Class a. Headless, probably by accident.

113. From south slope. Broken. Oxidized. Length, 0.074 m.

114. Broken. Oxidized. Length, 0.0245 m. Transition to shaft rectangular.

115. Broken. Oxidized. Length, 0.0565 m. Transition as in No. 114.

Class β. With heads.

116. From south slope. Corroded. Length, 0.068 m. Long neck. Body rectangular at beginning.

117. Corroded. Length, 0.08 m. Upper part of body rectangular.

118–120. Fragments of similar pins. No. 120 from south slope.

121. Length, 0.11 m. Diameter of head, 0.006 m.

122–132. Similar. Nos. 123, 125 from south slope. Lengths, 0.0487–0.117 m. Diameter of heads, 0.0065–0.0095 m.

133. Fragment. Beneath lowest bead, three narrow rings.

134. Fragment. At transition to body, block, above which narrow grooved collar.

135. From West Building. Fragment. Head grooved. Block with grooved collar, as in No. 134.

136. Fragment. From south slope. Length, 0.04 m. Doubtful whether collar should be classed as one or two separate beads.

FORM 5. SIX BEADS.

Class a. Headless, by accident.

137–139. Fragments. Rectangular block at transition to body, surmounted in Nos. **138, 139** by heavy collar.

Class β. With heads.

140. Point injured. Length, 0.094 m. Diameter of head, 0.005 m.

141. Length, 0.1035 m. Diameter of head, 0.006 m.

142–149. Fragments. Nos. 142, 149 from south slope. Diameter of heads, 0.007–0.01 m.

150. End gone. Oxidized. Length, 0.07 m. Diameter of head, 0.008 m.

151. Broken. Oxidized. Length, 0.044 m. Diameter of head, 0.012 m. Beneath corrugation, rectangular block, on which five engraved lines, and sixth separating block from round part of body.

152. Point gone. Corroded. Length, 0.147 m. Diameter of head, 0.012 m. Above rectangular block, grooved collar. On one side of block, engraved cross. Head grooved.

FORM 6. SEVEN BEADS.

Solid body.[1]

153–156. Fragments. No. 153 from West Building. Diameter of heads, 0.003–0.01 m.

157. Point gone. Oxidized. Length, 0.09 m. Head grooved. Diameter, 0.0085 m.

158. End gone. Length, 0.082 m. Rectangular block.

159. From south slope. End gone. Corroded. Length, 0.0602 m. Head grooved. Diameter, 0.009 m.

Separable body. Head, beads and rectangular block beneath. Round part inserted into hole in bottom of block.

160. Fragment. Pin gone. Length, 0.03 m. Diameter of head, 0.01; grooved.

161. Fragment. Pin gone. Length, 0.0275 m. Diameter of head, 0.007. Collar above block.

162. Pin gone. Corroded. Length, 0.03 m. Diameter of head, 0.0125. Rectangular block with diagonal cross engraved on each side. Above and below block, heavy collar.

FORM 7. EIGHT BEADS.

Class a. Headless, by accident and design.

Solid body.

163. From West Building. End gone. Oxidized. Length, 0.076 m. Rectangular block with diagonal cross on each side.

Separable body.

164. From West Building. Pin mainly gone. Length, 0.054 m. Cross on top. Rectangular block. Each side ornamented with three circles, having dot in centre. Pin of iron.

Class β. With heads.

Solid body.

165. Fragment. Length, 0.0375 m. Diameter of head, 0.0095 m.

166. End gone. Oxidized. Length, 0.092 m. Diameter of head, 0.0075 m. On top, cross from side to side.

167. Fragment. Oxidized. Length, 0.057 m. Diameter of head, 0.009 m. Beginning of body rectangular. Head grooved. Top ornamented with dots in circles, probably five, though only four show.

Separable body.

168. From back of South Building. Pin gone. Oxidized. Length, 0.034 m. Diam-

[1] Cf. pin from Mycenae (outside of shaft-graves) in Athens Mus., No. 4546.

eter of head, 0.01 m. Rectangular block with round hole. Above block, grooved collar.

169. From West Building. Similar to No. **168**. Length, 0.034 m. Diameter of head, 0.012 m. Head grooved. Cross on head. Rectangular block, above which grooved collar.

FORM 8. NINE BEADS.

170. Point gone. Oxidized. Length, 0.118 m. Diameter of head, 0.011 m.

171. Fragment. Length, 0.047 m. Diameter of head, 0.0085 m. Head seems to have had ornament like No. **167**.

172. Pin broken. Oxidized. Length, 0.065 m. Diameter of head, 0.007 m. Beginning of pin rectangular. Sides with engraved lines. On top of head, two dotted circles.

FORM 9. TEN BEADS.

Class α. Headless, by accident.

Separable body.

173. Fragment. Length, 0.0445 m. Rectangular block with double collar. In bottom hole, 0.002 m. in diameter. Pin probably of iron. Traces of engraving on block.

Class β. With heads.

Separable body.

174. Pin gone. Corroded. Length, 0.062 m. Diameter of head, 0.0115 m. Large cross on top of head. Pin was riveted into slit in block. In slit traces of iron pin remain. On two sides of block, cross.

FORM 10. ELEVEN BEADS.

Solid body.

175. Pin gone. Oxidized. Length, 0.077 m. Diameter of head, 0.014 m. Rectangular block with collar, sharply distinguished from pin. In centre of head, dot in circle. On each side of block, three dots in circles, one above the other.

Separable body.

176. Fragment. From West Building. Length, 0.0575 m.

177. Pin gone. Oxidized. Length, 0.06 m. Diameter of head, 0.011 m. Slit block with riveted pin. In slit traces of bronze pin.

FORM 11. FOURTEEN BEADS.

178. From West Building. Pin broken at block. Length, 0.067 m. Diameter of head, 0.0105 m. On each side of block, dot in circle.

179. Fragment. Length, 0.034 m.

FORM 12. FIFTEEN BEADS.

180. Fragment. Length, 0.0385 m.

FORM 13. SEVENTEEN BEADS.

181. Fragment. Length, 0.055 m.

FORM 14. TWENTY BEADS.

182. Fragment. Length, 0.0605 m. Slit block surmounted by low collar.

FORM 15. TWENTY-TWO BEADS.

183. Fragment. Pin gone. Corroded. Length, 0.083 m. Rectangular block with double grooved collar. In bottom hole, 0.0032 m. in diameter. On sides, cross. On three sides, dot in circle between upper limbs of cross. Traces of dot in circle between lower limbs of cross on one side.

FORM 16. TWENTY-SIX BEADS.

Head double. Upper part as usual. Lower part a large truncated cone.

184.[1] Eight beads. Head similar to that of No. **184 a**. Rectangular block with double collar. Inserted iron pin.

PLATE LXXIX.

184 a. From West Building. Corroded. Length, 0.127 m. Head consists of truncated cone, with round lower edges, surmounted by low inverted truncated cone. Top has ten-barred cross. Block slit entire length, with rivet holes in lower part. Pin of iron, as remaining portion shows. Cross carved on two sides of block.

Addenda. The following probably accidentally headless pins could not be arranged under the above forms, because of danger of fallacious conclusions respecting introduction of ornament.

Solid body.

185. Fragment. Length, 0.105 m. Rectangular block, on all four sides of which cross.

186. Fragment. Length, 0.0475 m. Rectangular block with heavy grooved collar. All four sides have cross.

187. Fragment. Length, 0.051 m. Short rectangular block with deep cross on each side.

188, 189. Fragments. No. 189 has on sides of block dots inclosed in double circles.

190. Oxidized. Length, 0.19 m. Rectangular block with double grooved collar. On sides of block, cross in circle. On pin next to block, six grooves.

Separable bodies.

191. Fragment. From south slope. Grooved block. Dots in circle.

192, 193. Fragments. Grooved blocks with traces of engraving.

194. From first chamber at east end of Lower Terrace, 1893. Slit block with remains of iron pin.

[1] Inserted here inconsistently because of similarity to No. **184 a**.

Uncertain object.

195. Pin or end of spit. Uncertain whether complete.

Thirty-three fragments discarded.

PLATE CXXXVII.

195 a. Fragment. From south slope. Length, 0.0375 m.

Type c. Pins with large, flat, thin head and corrugated or beaded upper part of body.

FORM 1. SOLID STEM AND PIN. HEAD SOMETIMES ATTACHED TO STEM.

Class α. Two corrugations.

196. Fragment. Length, 0.074 m. Diameter of head, 0.0125 m.

PLATE LXXIX.

197. From West Building. Point gone. Head damaged. Length, 0.052 m. Diameter of head, 0.018 m. Beginning of body rectangular.

198. Length, 0.116 m. Diameter of head, 0.013 m. Corrugations slight. Underneath, about seven fine grooves very close together.

Class β. Three corrugations.

199. Head about two thirds gone. Length, 0.12 m.

Class γ. Four corrugations.

200. Fragment. From south slope. Length, 0.053 m. Diameter of head, 0.014 m.

201. Fragment. Length, 0.083 m. Diameter of head, 0.0095 m.

202. Fragment. Length, 0.0375 m. Diameter of head, 0.0085 m.

203. Fragment. From south slope. Length, 0.05 m.

204. Fragment. Length, 0.0565 m.

205. Fragment. From above east end of Stoa, under Cyclopean wall, 1893. Length, circ. 0.09 m. Diameter of head, 0.0125 m. Block-like beginning of body.

206. Fragment. Length, 0.087 m. Body begins as in No. **205**.

207. Fragment. From south slope. Length, 0.027 m. Diameter of head, 0.0125 m. Short rough block.

208. Fragment. Length, 0.0725 m. Diameter of head, 0.013 m. Short rectangular block.

209. Fragment. From south slope. Length, 0.065 m. Diameter of head, 0.015 m. Rectangular block.

210. Fragment. Length, 0.046 m. Diameter of head, 0.014 m. Rectangular block.

211. Fragment. From south slope. Length, 0.104 m. Diameter of head, 0.012 m. Rectangular block.

212–215. Fragments. Diameter of heads, 0.009–0.0115 m. Rectangular blocks.

216. Fragment. From south slope. Length, 0.065 m. Diameter of head, 0.013 m. Rectangular block.

217. Fragment. From West Building. Length, 0.054 m. Diameter of head, 0.012 m. Rectangular block.

218–220. Fragments. Diameter of heads, 0.012, 0.013 m. Rectangular blocks.

221. Fragment. Length, 0.021 m. Rectangular block.

222. Fragment. From south slope. Length, 0.018 m. Diameter of head, 0.0125 m. Slight rectangular block.

223. Fragment. Diameter of head, 0.01 m. Rectangular block.

224, 225. Fragments. From south slope. Diameter of heads, 0.015, 0.012 m. Rectangular blocks, that of No. 225 with collar.

226. Fragment. Diameter of head, 0.013 m. Rectangular block with heavy collar.

227. Fragment. From back of South Building. Length, 0.128 m. Diameter of head, 0.016 m. Rectangular block with collar. In centre of top of head slight depression, corresponding to place of attachment. First case in this type where this is plain.

228. Fragment. Diameter of head, 0.0135 m. Rectangular block with overhanging collar.

229. Fragment. From south slope. Length, 0.108 m. Diameter of head, 0.009 m. Sharply cut corrugations on slender stem. Short rectangular block with collar marked off by groove.

230, 231. Fragments. From south slope. Diameter of heads, 0.01, 0.011 m. Blocks as in No. **229**.

232. Fragment. From West Building. Block as in No. **229**.

233. Fragment. From south slope. Block as in Nos. **229** and 228.

234, 235. Fragments. Diameter of head, 0.009, 0.0115 m. Blocks with collar as in Nos. **229**, 233, respectively.

Class δ. Five corrugations.

236. Point gone. Length, 0.0785 m. Diameter of head, 0.0125 m. Elementary rectangular block.

237–240. Injured and fragmentary. No. 239 from West Building. Diameter of heads, 0.01–0.013 m. Rectangular blocks.

241. From south slope. Length, 0.122 m. Diameter of head, 0.013 m. Short rectangular block.

242–244. Fragments. Diameter of heads, 0.012–0.013 m. Rectangular blocks.

245. Fragment. From south slope. Short heavy rectangular block.

246. Fragment. From back of South Building. Diameter of head, 0.013 m. Short rectangular block.

247–250. Fragments. Diameter of heads, 0.011–0.012 m. Rectangular blocks, which in Nos. **249**, **250** have overhanging collar.

251. Fragment. From south slope. Diameter of head, 0.0135 m. Rectangular block.

252. Fragment. Rectangular block with small collar.

253. Fragment. From south slope. Diameter of head, 0.012 m. Block as in No. **252**.

254. Length, 0.118 m. Diameter of head, 0.012 m. Rectangular block with small collar.

255. Fragment. From back of South Building. Diameter of head, 0.0135 m. Rectangular block with projecting collar.

256. Point and part of head gone. Length, 0.063 m. Diameter of head, 0.013 m. Block with projecting collar.

257. Fragment. Diameter of head, 0.012 m. Block as in No. **256**.

258, **259**. Fragments. Diameter of heads, 0.013, 0.011 m. Blocks as in No. **256**.

260. Fragment. From back of South Building. Diameter of head, 0.0145 m. Block tapers toward top. Heavy projecting collar.

261. Fragment. Block similar to that of No. **260**.

262. Fragment. From south slope. Length, 0.065 m. Diameter of head, 0.013 m. Block as in No. **255**. Cross on all four sides. Probably also on head.

263, **264**. Fragments. Diameters of heads, 0.015, 0.01 m. Blocks as in No. **255**.

265. Fragment. From back of South Building. Diameter of head, 0.012 m. Grooved collar on block.

266. Fragment. Rectangular block, with collar separated by groove.

267. Fragment. End gone. Oxidized. Length, 0.0715 m. Diameter of head, 0.01 m. Rectangular block with projecting grooved collar.

268. Fragment. From south slope. Diameter of head, 0.0105. Block as in No. **267**.

269. Fragment. From West Building. Length, 0.0515 m. Rectangular block with grooved collar.

Discarded: one.

Class ε. Six corrugations.

270. Head and point broken. Length, 0.088 m. Diameter of head, 0.02 m. Three lower corrugations small and separated by shallow rings.

271, **272**. Fragments. **272** from south slope. Diameter of heads, 0.0075, 0.0115 m.

273. Point blunted. Length, 0.1215 m. Diameter of head, 0.01 m.

274. Length, 0.145 m. Diameter of head (nicked), 0.0125 m. Rectangular block. Corrugations not strung.

275. Condition poor. Point gone. Length, 0.0615 m. Diameter of head, 0.0125 m. Rectangular block. Corrugations sharply defined.

276–278. Fragments. Diameter of heads, 0.0105–0.012 m. Blocks.

279. Point gone. Length, 0.084 m. Diameter of head, 0.012 m. Rectangular block with raised collar.

280. From back of South Building. Fragment. Diameter of head, 0.011 m. Rectangular block separated from pin by groove. Raised collar.

281–285. Fragments. Diameter of heads, 0.009–0.014 m. Rectangular blocks tapering toward raised collar.

286. Fragment from south slope. Diameter of head, 0.011 m. Block as in Nos. **281** ff.

287. Fragment. Diameter of head, 0.017 m. Long rectangular block with raised grooved collar.

288. Fragment from back of South Building. Diameter of head, 0.01 m. Short rectangular block with grooved raised collar.

Class ζ. Seven corrugations.

289. Point and most of head gone. Length, 0.09 m. Rectangular block with collar. Traces of cross on sides of block.

Class η. Eight corrugations.

290. Point gone. Length, 0.0915 m. Diameter of head, 0.011 m. Corrugations elongated with shallow grooves between.

291. Length, 0.127 m. Diameter of head, 0.012 m. Rectangular block, separated from pin by slight groove with raised grooved collar. Possibly traces of cross on sides.

Of this form nine fragments were discarded, including one from south slope.

FORM 2. SEPARABLE PIN. PIN INSERTED IN RECTANGULAR BLOCK, BENEATH CORRUGATIONS. HEAD ATTACHED LIKE RIVET.[1]

Inserted pins are later than introduction of rectangular block. No pin-shafts preserved.

Class α. Five corrugations.

292. Head broken. Length, 0.027 m. Diameter of head, 0.014 m. Rectangular block broken at lower end. Has slit instead of hole.

293. Length, 0.027 m. Diameter of head, 0.018 m. Stem shows plainly on top. Block.

294. Fragment from West Building. Slight remains of iron pin. Block.

295. Fragment. Length, 0.0263 m. Diameter of head, 0.0215 m. Rectangular block with small raised grooved collar. In bottom, hole, 0.003 m. across.

296. From south slope. Head mostly gone. Length, 0.03 m. Stem shows above head. Rectangular block with raised grooved collar. Traces of iron pin.

Class β. Six corrugations.

297. Fragment. From south slope. Length, 0.03 m. Rectangular block with slight groove near top. Pin probably of iron.

298. From south slope. Length, 0.031 m. Diameter of head, 0.019 m. Slight trace of stem on top. Rectangular block with slightly grooved collar. Pin of iron.

299. From south slope. Length, 0.029 m. Diameter of head, 0.023 m. Top of head has row of dots inclosed by circles close to edge.

300. Condition poor. Length, 0.032 m. Diameter of head, 0.0195 m. Trace of stem on top. Dots in circles same as in No. **299**. Pin probably of iron.

301. Length, 0.029 m. Diameter of head, 0.022 m. No trace of stem. Pin of iron. Dots in circles as above, and one where stem should appear.

Class γ. Seven corrugations.

302. From back of South Building. Length, 0.0365 m. Diameter of head, 0.017 m. No trace of stem on top. Pin probably of iron. Dots in circles on head round edge.

303. From south slope. Length, 0.036 m. Diameter of head, 0.018 m. Rectangular block with slight grooved collar. Pin probably of iron.

304. Length, 0.031 m. Diameter of head, 0.016 m. Dots in circles on head. Rectangular block with raised grooved collar. Pin of iron.

305. Fragment. Length, 0.035 m. Rectangular block with heavy collar. Pin probably of iron.

Class δ. Eight corrugations.

306. Fragment. Length, 0.041 m. Rectangular block with raised collar. Iron pin. Bronze when filed showed reddish.

307. Fragment. Two rows of dots in circles on head.

Class ε. Nine corrugations.

308. Head mostly gone. Length, 0.042 m. Dots in circles on head. Pin probably of iron. Fine groove on block.

309. Length, 0.0465 m. Diameter head, 0.0215 m. No trace of stem on top. Rectangular block with raised collar. Pin probably of iron.

Class ζ. Eleven corrugations.

310. From south slope. Length, 0.039 m. Diameter of head, 0.0125 m. Rectangular block with slightly raised grooved collar. Pin probably of iron.

311. Head mostly gone. Length, 0.054 m. Dots in circles on head. Slight rise at centre of head above stem. Rectangular block with grooved collar, probably ornamented on all sides with dots in circles.

Class η. Fourteen corrugations.

312. Poor condition. Length, 0.0435 m. Diameter of head, 0.0135 m. No certain trace of stem on top. Rectangular block ornamented on all sides with cross; raised grooved collar. Pin probably iron.

Class θ. Sixteen corrugations.

313. Condition poor. Length, 0.04 m. No certain trace of stem on top of head. Dots in circles on edge of head. Rectangular block with raised grooved collar. Pin of iron. Bronze when filed showed medium color.

Of this form four fragments were discarded.

FORM 3. BODY SOLID, WITH ALTERNATE BROAD AND NARROW SWELLINGS. HEAD ATTACHED.

314. Fragment. Length, 0.028 m. Diameter of head, 0.022 m. Stem shows in centre of head.[2]

Addenda. The following (Nos. **315–317**) are of too uncertain character to treat as a separate

[1] With this form cf. pin-head from Lusi, *Jahreshefte*, IV. p. 55, fig. 97 (Reichel and Wilhelm).

[2] Cf. bronze pin of tack-form with large flat head and small corrugated body from Menidhi, Athens Mus., No. 1928.

type, inasmuch as the length being unknown, they may be rivets. Not corrugated.[1]

315. End gone. Diameter of head, 0.011 m. Stem shows on top of head.

316. End gone. Diameter of head, 0.014 m. Stem projects through head. Body rectangular.

317. Similar to No. **316**. Diameter of head, 0.02 m.

Type d. Pins usually with conical head and solid body, of which upper part is ornamented with threading and bead-like corrugations, or with a disk substituted for a corrugation.

FORM 1. THREADING AND CORRUGATIONS.

Class α. One corrugation.

318. End gone. Length, 0.074 m. Threading faint.

319. Length, 0.117 m. Screw threading.

320. Head partly gone. Length, 0.152 m. Traces of threading between head and corrugation.

Class β. Two corrugations.

321. From south slope. Broken. Length, 0.096 m. Coarse screw-threading between head and first corrugation. Rectangular beginning of pin.

322. End gone. Length, 0.102 m. Screw-threading between head and corrugation. Beginning of pin rectangular.

323. Head and point gone. Length, 0.128 m. Plain, coarse threading between top and first corrugation. Rectangular beginning of pin.

324. Head gone. Length, 0.12 m. Rather fine screw-threading above first corrugation. Rectangular beginning of pin.

325. From West Building. Point broken. Length, 0.073 m. Threading above first corrugation. Beginning of body rectangular.

326. From West Building. End broken. Length, 0.1105 m. Above upper corrugation, fine threading.

327. Point broken. Length, 0.108 m. Screw-threading between head and first corrugation.

328. Point broken. Length, 0.155 m. Coarse screw-threading between head and first corrugation.

329. Point broken. Length, 0.084 m. Fine threading between head and first corrugation.

330. Point broken. Length, 0.198 m. Top of head rounded. Irregular screw-threading between head and lower corrugation.

[1] Cf. flat-headed bronze tacks from Mycenae (outside tombs), Athens Mus., No. 3261.

331. Broken. Length, 0.097 m. Medium irregular screw-threading from head to lower corrugation.

332. Length, 0.208 m. Medium screw-threading beneath head and between corrugations. Above upper and beneath lower corrugations, grooves, forming in each case a small corrugation.

333. Point broken. Length, 0.1865 m. Threading fine from head to lower corrugation. Secondary corrugations as in No. **332**. Beginning of pin rectangular.

Under side of upper corrugation flat.

334. Length, 0.12 m. Head to first corrugation, 0.0155 m. Medium coarse screw-threading between head and first corrugation. Second corrugation smaller than first. Above it small corrugation, as in No. **332**.

335. Both ends broken. Length, 0.104 m. Above first corrugation, coarse plain threading. Second corrugation smaller than first. Beginning of pin rectangular.

Class γ. More than two corrugations.

Group i. Under side of main corrugation flat.

336. Fragment. Length, 0.072 m. Between corrugations, rather fine threading. Beginning of body rectangular.

Group ii. More elaborate.

337. Both ends gone. Length, 0.187 m. From top to second corrugation (reckoning from the top), probably coarse threading. Second and third and third and fourth seem divided by two grooves. Below fourth ring, perhaps originally disk. Between ring and fifth corrugation, a very low corrugation, which probably has groove in middle. Above and below, coarse threading. Below fifth corrugation, clearly marked rectangular block, tapering to pin.[2]

FORM 2. THREADING AND CORRUGATION; WITH DISK SUBSTITUTED FOR CORRUGATION, USUALLY UPPER ONE.

Class α. Disk and one corrugation.

338. Both ends gone. Length, 0.116 m. Uncertain whether upper part threaded. Disk larger than corrugation. Beginning of pin rectangular.

339. Fragment. Top and most of body gone. Above disk, four small corrugations. Lower one grooved. Beginning of pin rectangular.

340. Both ends gone. Length, 0.10 m. Grooved above disk, forming four small corrugations.

[2] Of this form, seven were discarded, of which six were of two corrugations and one uncertain.

341. Top and most of body gone. Length, 0.045 m. Above disk, irregular screw and plain threading. Below disk, a narrow, then a longer lower corrugation, followed by two rings. Beginning of pin rectangular.

The following have two or more plain raised surfaces above disk, which in some cases approach character of subordinate corrugations.

342. End gone. Length, 0.07 m. Between head and disk, two low corrugations separated by threading, which continues to head. Below disk, plain space, then low corrugation, then ring. Prominent rectangular beginning of pin.

343. Fragment. Length, 0.062 m. Above disk, stem tapers, and is ornamented with convex plain surfaces and four groups of three rings. Between disk and corrugation, similar surface with rings.

344. End gone. Length, 0.089 m. Raised surface close to collar of disk. Space above divided into three parts, separated by two raised surfaces. Fine threading. Ring above corrugation. Beginning of body rectangular.

PLATE CXXXVII.

345. Ends gone. Length, 0.13 m. Above disk, stem tapers in four raised surfaces, divided by rings. Below disk, plain convex surface between group of three rings. Rectangular beginning of pin, with groove at top.

Class β. Disk and two corrugations beneath.

PLATE LXXIX.

346. End gone. Length, 0.096 m. Head has rounded top. Upper part probably had plain surfaces and rings.

347. Head and most of body gone. Length, 0.042 m. Beneath corrugation, rectangular piece. Above disk, screw-threading. Rings between disk and first corrugation, and between corrugations.

348. Perhaps belongs to *Class* γ. Most of body gone. Length, 0.074 m. Between head and disk, coarse screw-threading. Between corrugations, single low ring.[1]

Class γ. Disk and more than two corrugations, of which the one beneath disk is slightly larger.

349. End gone. Length, circ. 0.155 m. Head to disk threaded downward from right to left. Beneath corrugations, small ring, then rectangular block, beneath which round body of pin. Space between disk and lowest corrugation plain.

Of this form two were discarded.

Addenda. The following two may be of either form.

350. Fragment. Length, 0.047 m. Head and fourteen corrugations. Bottom filed. Solid. Color medium.

351. From West Building. Lower end broken. Length, 0.054 m. Entire length from head to last corrugation with fine threading.

Six unclassified discards.

Type e. Pins with body similar to preceding (Type d, FORM 1), and oblong rivet-shaped head, usually with conical top. Pin inserted into middle of rivet bar. Ends of heads attached, except perhaps in No. 352.[2]

Class α. All or part of body preserved.[3]

Group i. Body has threading and one corrugation.

PLATE LXXX.

352. Head damaged. Length, 0.0988 m. Length of head, 0.013 m. Pin top shows on upper side of head, which has four grooves on each side. Next head, two small threads. Then convex surface, beneath which screw-thread to corrugation. Beneath corrugation, beginning of body rectangular. Here two threads.

353. Possibly belongs under ii. Broken at base of corrugation. Length, 0.019 m. Length of head, 0.0205 m. Top of pin shows. Ends of head convex and rounded. Shaft finely threaded to ends on both sides. Head to corrugation also.

Group ii. Body has threading and two corrugations.

354. Ends of head and of pin gone. Length, 0.059 m. Length of head, 0.028 m. Coarse screw-threading on both sides of head. From head to lower corrugation rather fine irregular screw-threading. Beginning of pin-shaft rectangular.

355. From northeast part of excavation, near Cyclopean wall, 1893. End of pin and head gone. Length, 0.075 m. Length of head,

[1] Cf. the fragment, *Olympia*, No. 1134 (upside down), said by Furtwängler to be completely preserved.

[2] Type found at Tiryns (No. 1587), and at Heraeum tomb (No. 3325); Athens Museum. Possible also that *Olympia*, No. 431 b, belongs here (though not stated that head has hole for shaft), rather than to pendants, as Furtwängler takes it. With this type may be compared, in general, a silver pin with eyelet above bar, but otherwise similar in shape to simpler Greek forms, from Remedello, prov. of Brescia. (Montelius, *Civ. Prim. It.* p. 196, fig. 13, pl. 36.) Italian specimen one piece.

[3] Though degree of preservation is not a proper basis for classification, it is adopted here because corresponding in the main to the material employed, i. e. bronze or iron.

0.0215 m. Pin shows on top of stem of head. Threading of head similar to that of No. **354**. Finer between corrugations. Beginning of pin rectangular.

356. Broken at base of second corrugation. Head ends injured. Length, 0.037 m. Length of head, 0.0275 m. Stem shows on top. Ends of head hollow, thin, and originally quite large. Space circ. 0.005 m. each side of centre has screw-threading from right to left. Between head and second corrugation, slightly finer threading from right to left.

Class β. Head only preserved.

Group i. Stem threaded; with break in threading at centre.

357 [on PLATE wrongly numbered **367**]. Length, 0.019 m. Ends rounded. Screw threaded. Diameter of pinhole, 0.0015 m. Nos. **357 a, b, c**, fragments; latter two from south slope. Form series leading to conical ends in No. **358**.

358. Both ends injured. Length, 0.025 m. More damaged end seems to show the construction, the conical end of stem being covered with thin conical cap. Medium fine threading.

359. From back of South Building. Ends injured. Length, 0.027 m. Fragment remains of pin, probably of iron.

360. From cutting above Upper Temple toward tents. Ends injured. Length, 0.025 m. Medium screw-threading. Fragment of probable iron pin.

361. Condition poor. Length, 0.0265 m. Medium screw-threading.

362. Ends much injured. Length, 0.027 m. Medium threading.

363. Ends injured. Length, 0.0285 m. Character of threading uncertain.

364. Corroded. Length, 0.034 m. Stem with three grooves on one side and six on other. Coarse screw-threading. Remains of pin, probably iron.

365. Corroded. Length, 0.0335 m. Traces of fine threading of uncertain character.

366. From south slope. Much corroded. Length, 0.0315 m. Threading coarse, and of uncertain character.

367. From cutting above Upper Temple toward tents. Much corroded. Length, 0.039 m. Coarse screw-threading. Remains of iron pin.

368. From south slope. Much corroded. Length, 0.036 m. Threading rather fine.

369. From northeast corner between Cyclopean wall and Stoa, 1893. Much corroded. Length, 0.0405 m. Ends solid, one larger than the other. Slight traces of fine threading. Remains of iron pin.

370. Ends gone. Length, 0.041 m. Medium threading.

Group ii. Stem threaded. Ends ornamented with grooves.

371. From northeast corner below Cyclopean wall, 1893. Condition poor. Length, 0.026 m. Line engraved on each end. Medium threading from right to left. Remains of pin, probably iron.

372. Length, 0.0325 m. Ends solid; diameter, 0.021 m. Groove on each head. Fine screw-threading.

373. Injured. Length, 0.038 m. Groove on each end. Remains of iron pin.

374. Poor condition. Length, 0.0465 m. Three grooves on ends. At either side of pinhole, fine screw-threading. Remains of iron pin.

375. Poor condition. Length, 0.042 m. Four grooves on one end, and three now visible on other; probably had four. Remains of bronze pin. Medium fine threading.

376. Poor condition. Length, 0.05 m. On each end six grooves. Medium fine threading of uncertain character on shaft.

377. Poor condition. Length, 0.051 m. Traces of grooves on end. Fine threading of uncertain character on shaft. Pin probably bronze.

378. Poor condition. Length, 0.055 m. Three grooves on ends. Medium threading of uncertain character on shaft. Pin probably iron.

One was discarded from each of the above groups.

Group iii. Ends round and thick at edge. Body tends to rectangular form.

379. Much corroded. Length, 0.024 m. Diameter of ends, 0.012 m. Stem seems inset into ends. Pin iron. This pin is between type of Nos. **357** and **380**, but closer to No. **357**.

380. Poor condition. One head gone. Length, 0.029 m. Thickness of ends, 0.006 m. Threading not certain.

381. From West Building. Much corroded. Length, 0.032 m. Diameter of ends, 0.013 m. Stem rectangular, with rounded sides. Traces of threading.

Class γ. Miscellaneous.

382. From south slope. Length, 0.031 m. Diameter of ends, 0.019 m. Stem rectangular, with one side broader than the other. Metal dark reddish brown, probably copper.

383. From West Building. See No. **2217**.

Of this *Class* γ, one was discarded.

Type f. Pins often with separable heads. Heads flat, and upper part of body compound, consisting of one main corrugation, flanked on each side, but especially below, by narrow bands and rings, which develop into one or more subordinate corrugations.[1]

FORM 1. UPPER PART OF BODY ELONGATED AND USUALLY WITH LARGE THIN HEAD.[2]

Class α. No ornament, or simple threading at sides of corrugation. Body solid.

384. From south slope. One fourth head and end of point gone. Oxidized. Length, 0.095 m. No ornament. Diameter of head, 0.0085 m.

385. Head nicked. Oxidized. Length, 0.086 m. Diameter of head, 0.0075 m. Above corrugation, groove.

386. Slightly corroded and oxidized. Length, 0.091 m. Diameter of head, 0.006 m. Above corrugation, three small rings. Beginning of pin below corrugation rectangular.

387. Head nicked. Corroded and oxidized. Length, 0.083 m. Diameter of head, 0.008 m. Above corrugation, five small rings separated by irregular grooves only apparently resembling screw.

388. End gone. Somewhat corroded. Oxidized. Length, 0.048 m. Diameter of head, 0.0065 m. Above and below corrugation, low ring or minor corrugation.

Class β. At either side of corrugation, or at least on under side, is rise to sort of ring, falling off abruptly on outside, being beginning of subordinate corrugation.

Group i. No ornamentation at ends or centre.

389. From south slope. End gone. Oxidized. Length, 0.034 m. Diameter of head, 0.0135 m. Stem projects through head circ. 0.001 m. Diameter of stem, 0.0019 m. Round edge a row of inclosed dots. Beneath corrugations, sort of jacket, 0.003 m. in length, rising toward lower end. Corrugations, jacket, and pin probably one piece.

390. From south slope. Pin mostly gone. Present point not original. Length, 0.031 m. Diameter of head, 0.0125 m. Beneath corrugations, raised grooved ring. Pin stem projects through head, diameter, 0.0019 m.

391. End gone. Slightly oxidized. Length, 0.03 m. Diameter of head, 0.0085 m. Diameter of projecting stem, circ. 0.0008 m. Probably two parts, head and stem.

392. Corroded. Length, 0.052 m. Diameter of head, 0.007 m. Jacket consists of central corrugation, and ring at either side. Probably one piece with pin. Head thin, perhaps separable.

Group ii. Lower or upper ring grooved. Central knob plain.

393. Point blunted. Length, 0.077 m. Diameter of head, 0.0115 m. Beneath knob, grooved ring. Between knob and ring, pin thins to less diameter than it has farther down. Thin head.

394. Bad condition. Length, 0.074 m. No jacket. Beneath knob, high grooved ring. Head thin.

395. Length, 0.065 m. Diameter of head, 0.012 m. Round edge, row of inclosed dots. No jacket. Below knob, grooved ring. Head thin. Two parts, probably.

396. Length, 0.084 m. Diameter of head, 0.009 m. Round edge row of inclosed dots. Edge of head grooved. Above knob, ring; below, grooved ring. Probably two parts.

397. Poor condition. Length, 0.027 m. Diameter of head, 0.0115 m. On top, undercut knob intended to represent projecting stem. Beneath knob, grooved ring. Above corrugation, upward increase in diameter of jacket to head.

[1] Cf. bronze pins from Mycenae (outside shaft-graves) with flat head and single ball or swelling (Athens Mus., No. 2558). A more advanced type, of ivory, with two balls and double rings between convex spaces, *ibid.* No. 2608. Bronze pin with flat head with small corrugation, at either side of which grooved or double ring, and simple jacket-effect beneath, from above the palace at Mycenae (Tsountas, *Ἐφημ. Ἀρχ.* 1887, col. 169, No. 19, *βελόνη χαλκῆ εὑρηθεῖσα εἰς τὰ ἀνάκτορα στρώματα τῶν ἐπὶ τοῦ Μεγάρου ζωγράφων*, pl. 13). Cf. No. **400**. Simple and jacket forms from Tiryns, Athens Mus., No. 1586. The pins from the Dictaean cave published by Hogarth, *Annual of British School at Athens*, VI. p. 112 resemble those of this type chiefly in the cap. Cf. Nos. **507**, **510**. Pins somewhat like this type, especially elementary forms, from lakes Neuchatel and Bienne, in Brit. Mus.

[2] To this form belongs a silver pin in the British Museum, said to have come from Argolis. *Jahrb.* 1897, *Anz.* p. 196. Inscription *C. I. G. P. I.* No. 508. Added here by kind permission of Dr. A. S. Murray.

PLATE CXXXVII. Condition good. Length, 0.116 m. Similar in shape to pins of *Class* γ, Group vi., but the ring development resembles rather that of Group ix. Bead striated vertically as in FORM 2, *Class* η, No. **511**, or *Class* θ, No. **512**. Three rings under head, the topmost being largest. Single notched ring at either side of principal bead. Two rings, or rather single ring with accentuated approach at either side of smaller bead. On top of head, and on under side, rosettes. Cf. No. **667**.

398. From south slope. Corroded. Length, 0.049 m. Diameter of head, 0.0135 m. Projecting stem. Head and both rings grooved. Inclosed dots round edge of head.

Group iii. Central corrugation has an ornament (plain or grooved ring) at either side. Otherwise similar to Groups i. and ii.

399. Poor condition. Length, 0.06 m. Diameter of head, 0.014 m. Stem projects. Head grooved. Grooved ring below corrugations. On upper side of corrugations, single ring. On lower side, two. Head seems one piece with stem.

400. Condition poor. Length, 0.035 m. Diameter of head, 0.0125 m. Stem projects. Low double ring on both sides of corrugations. Thence on upper side gradual rise to join head. On lower side, rise to grooved ring. On top of head, rosette. Groove on edge of head. Filed; color medium.

401. From south slope. Bad condition. Length, 0.031 m. Diameter of head, 0.02 m. Undercut knob on top representing stem. Head grooved. Corrugation large, with grooved rings at either side. Below, effect of jacket inclosing stem, but probably all of one piece.

402. Bad condition. Length, 0.034 m. Diameter of head, 0.012 m. Two grooves in edge of head. Ring on either side of corrugation. Uncertain whether corrugation and rings are one piece with stem. Head possibly separate, in which case projecting knob goes with it.

403. Bad condition. Length, circ. 0.083 m. Diameter of head, 0.008 m. Stem projects. Edge of head grooved. Ring on either side of corrugation. Stem on both sides of corrugation smaller than beginning of pin. Beneath corrugation, double-grooved ring. Head perhaps separate. Rest of one piece.

404. Length, 0.088 m. Diameter of head, 0.0095 m. Small knob on top of head. Edge of head grooved. On either side of corrugation, grooved ring, of one piece with corrugation. Grooved ring beneath head. Below corrugation, two rings. Lower slightly larger and grooved. Head perhaps separate. Rest perhaps one piece. Waist in stem above and below corrugation.

405. Broken. Length, 0.0635 m. Diameter of head, 0.0125 m. Grooved. Knob small. Grooved ring on either side of corrugation and joined to it. Beneath head, small swelling. Below corrugation, two rings, upper larger and grooved. Head perhaps separate. Rest of one piece.

406. From south slope. Head broken. Length, 0.0975 m. At top, a disk. Beneath, grooved ring, divided by low ridge around centre.[1]

Class γ. Central corrugation ornamented at side. Under head, one or more rings, sometimes thick enough for a subordinate corrugation. Beneath main corrugation, subordinate one, of varying size, flanked by a ring, which may or may not be grooved at either side.

Group i. Much elongated. Two rings under head. Lower corrugation narrow, resembling more prominent ring; flanked at either side by single ring.

407. Condition poor. Length, 0.099 m. Diameter of head, 0.012 m. Edge grooved. Knob on top undercut. Under head, grooved ring. Single ring either side of corrugation. Parts are head with knob, stem, and jacket.

408. Poor condition. Length, 0.0915 m. Diameter of head, 0.0165 m. Thin. Knob undercut. Jacket probably separable. Lower of rings beneath head and ring just above corrugation are ends of same piece of bronze. So also the ring at under side of corrugation and that above lower corrugation ring. Knob goes with head. Remainder looks as though strung separately on stem, but probably one piece, except perhaps head and knob.[2]

409. Poor condition. Length, 0.104 m. Diameter of head, 0.015 m. No knob. Seems to have same parts as No. **408**, but more crowded and probably all of one piece (i. e. all parts of jacket). Lowest ring plain. Filing on broken head showed no lines of separation. Parts probably head, jacket, stem, pin.

Group ii. Elongated jacket; like preceding, but more elaborate, and with more rings under head or about lower corrugation.

410. From south slope. Pin gone. Corroded. Length, 0.028 m. Diameter of head, 0.0135 m. Knob low and undercut. Resembles No. **409**, but second ring from top and rings on either side of head grooved. Broad secondary corrugation with raised ring in centre and grooved ring on either side. Filing showed color medium. Probably all one piece except perhaps head and knob.

411. Broken, condition bad. Length, 0.0715, m. Similar to No. **410**. Pin probably one piece.

412. Poor condition. Length, 0.083 m. Diameter of head, 0.0127 m. Knob small and undercut. Head thin. Similar to Nos. **408**–**411**, but more elaborate and finished. Jacket divided into six parts. Pin probably one piece.

413. Condition poor. Length, 0.043 m. Diameter of head, 0.023 m. Knob low. Similar to No. **412**. At top of stem, however, three rings. Bead and lower connecting block one piece. Probable that grooved ring at lower end of upper connecting block belongs with it. Certainly belongs with bead. Filing showed core yellow, with redder metal outside. This perhaps due to oxidation. Jacket, except lowest ring, probably one piece, and no separate stem running through. Head thin; knob probably end of stem. Rosette on top of head.

414. Condition poor. Length, 0.067 m. Diameter of head, 0.015 m. Knob undercut. Similar to No. **412**. Divided by slightly deeper grooves into upper connecting block with both rings, bead, lower connecting block with both rings, lower corrugation, grooved ring, plain ring. Pin probably one piece, except perhaps head and knob.

415. Condition poor. Length, 0.055 m. Diameter of head, 0.018 m. Filing showed head and jacket of one piece.

416. Length, 0.074 m. Diameter of head, 0.0125 m. Undercut, low knob. Head grooved on edge. Ring beneath head and at either side of bead vertically notched. A slightly larger similar ring forms lower corrugation. Beneath this, grooved ring, then smaller notched ring. Pin probably solid, except perhaps head and knob. Parts mentioned separated by clearly marked grooves. Lowest ring goes with pin.

Group iii. Central corrugation plain, with ring on each side. Just under head, a single ring. Corrugations plain. Rings small. Lower corrugation usually narrow and with ring on each side.

417. Condition poor. Length, 0.038 m. Diameter of head, 0.0185 m. Knob low; slightly undercut. Parts separated by shallow grooves. Pin probably one piece, except perhaps head and knob.[1]

418. Condition poor. Length, 0.039 m. Diameter of head, 0.023 m. Small knob. Pin of one piece and head as in No. **417**. Possibly, but improbably, from same factory as No. **417**.

419. Length, circ. 0.135 m. Diameter of head, 0.019 m. Knob not undercut, and very possibly genuine stem. Lower corrugation only a heavy ring. Pin and head as No. **417**.

420. Condition poor. Length, 0.037 m. Diameter of head, 0.02 m. Low, undercut knob. Undercut effect perhaps due to hammering. Pin and head as in No. **417**. Very possibly from same factory as No. **419**.

421. From back of South Building. Pin broken. Length, 0.028 m. Diameter of head, 0.0205 m. Knob small and undercut. Similar to No. **420**, except ring above corrugation is grooved. Edge of head grooved. Pin and head as No. **417**.

422. From back of South Building. Length, 0.045 m. Diameter of head, 0.018 m. Similar to No. **421**.

423. Bad condition. Length, 0.024 m. Diameter of head, 0.019 m. Similar to No. **421**. Filing showed medium light color.

424. From south slope. Condition bad. Length, 0.032 m. Diameter of head, 0.023 m. Similar to No. **421**.

425. From south slope. Condition bad. Length, 0.0375 m. Diameter of head, 0.0195 m. Similar to No. **424**, and possibly from same factory.

426. End gone. Length, 0.0485 m. Diameter of head, 0.0205 m. Similar to No. **425**.

427. Pin gone. Length, 0.041 m. Diameter of head, 0.018 m. Upper four rings belong structurally to connecting blocks. Upper ring of each pair the larger. Pin and head as before.

428. End gone. Length, 0.0415 m. Diameter of head, 0.019 m. Top ring largest. Pin and head as before.

Group iv. Similar, but with larger rings, especially at top.

429. Pin gone. Condition bad. Length, 0.025 m. Diameter of head, 0.017 m. Edge of head grooved. Head probably separate and knob part of stem.

430. End gone. Condition poor. Length, 0.065 m. Diameter of head, 0.016 m. Knob

[1] Probably not like Naue, *Rev. Arch.* XXVII (1895), p. 58, No. 41.

[2] Cf. pin from Megara Hyblaea, published by Orsi, *Mon. Ant. Linc.* I. col. 816. This example is similar in style, but has small attached ring at either side of main corrugation and under head.

[1] Cf. *Olympia*, No. 482, which is smaller but of same general design.

slightly undercut. Row of dotted circles round top of head. Edge grooved. Lowest two rings rope-threaded. Pin and head as in No. **417**.

431. End gone. Length, 0.0535 m. Diameter of head, 0.018 m. Rim on top of head slightly raised. Edge has two grooves. Pin and head as in No. **417**.

432. Condition poor. End gone. Length, 0.0415 m. Diameter of head, 0.0195 m.

433. Condition poor. End gone. Length, 0.051 m. Diameter of head, 0.0155 m.

434. Pin mostly gone. Length, 0.029 m. Diameter of head, 0.015 m. Edge of head has three grooves. Lowest ring forms top of pin.

435. Condition poor. Length, 0.0355 m. Diameter of head, 0.0175 m. Edge of head grooved. Looks as though the parts were, (1) head, (2) knob, (3) stem and pin with grooved ring, and (4) rings with corrugation, but possibly whole pin of one piece.

436. Pin gone. Length, 0.025 m. Diameter of head, 0.022 m. Edge of head has raised band in centre. Looks separable like No. **435**, but probably as in No. **417**. Possibly from same factory as No. **435**.

437. Condition poor. Length, 0.0285 m. Diameter of head, 0.0125 m. (corroded). Edges of upper four rings had vertical lines. Whole pin probably one piece.

438. Most of head and pin gone. Length, 0.032 m. Diameter of head, 0.003 m. Filing showed color medium. Pin as in No. **437**.

439. End gone. Length, 0.058 m. Diameter of head, 0.019 m. Edge of head has two grooves. Pin looks separable, into (1) head, (2) upper pair of rings, (3) lower pair, (4) corrugations, (5) lowest ring, (6) stem, knob, and pin, but probably all one piece.

440. Pin gone. Length, 0.03 m. Diameter of head, 0.0245 m. Edge of head has two bands. Only one ring above upper corrugation. Filing showed iron pin. Color of bronze medium. Head, knob, and jacket probably one piece.

Group v. Ring under head increased in size to nearly that of subordinate corrugation.

PLATE LXXXI.

441. Length, 0.113 m. Diameter of head, 0.018 m. Head thin, outer rim slightly raised on top. Five rings. Top one separated from head by shallow groove. Pin probably one piece.

442. End gone. Length, 0.0855 m. Diameter of head, 0.021 m. Edge of head grooved. Rings at either side of main corrugation grooved. Pin and head as in No. **417**.

443. Most of pin gone. Length, 0.037 m. Diameter of head, 0.0235 m. Row of dots near edge on top of head. Edge of head grooved. Corrugations larger than in No. **442**, but arrangement similar. Both probably from one factory.

Group vi. Similar to Groups iii. and iv., but with two rings just under head.

444. From south slope. End gone. Length, 0.075 m. Diameter of head, 0.015 m. Raised rim round upper edge of head. Grooved ring beneath head. Below main corrugation, shaft smaller than at beginning of pin. Pin and head as in No. **417**.[1]

445. Pin gone. Length, 0.024 m. Diameter of head, 0.0185 m. Edge of head grooved. Beneath, two rings, the upper one being the larger. Filing showed color medium light. Pin and head as in No. **417**.

446. End gone. Length, 0.045 m. Diameter of head, 0.016 m. Slight rim round top of head. Edge of head grooved. Rings beneath head as in No. **445**. Pin and head as in No. **417**.

447. End gone. Condition poor. Length, 0.045 m. Diameter of head, 0.016 m. Slight rim on top of head. Two grooves round edge of head. Ring nearest head largest. Pin probably one piece.

448. Point gone. Condition poor. Length, 0.095 m. Diameter of head, 0.014 m. Top ring largest. Lowest ring goes with pin. Head and pin as in No. **417**.

449. Condition poor. End gone and most of head. Length, 0.045 m. Rings beneath head as in No. **446**. Filing showed color medium light. Whole pin probably one piece.

450. Condition poor. Length, 0.0315 m. Diameter of head, 0.0165 m. Rim round top side of head. Raised band round centre of edge of head. Head and pin as in No. **417**. Perhaps from same factory as No. **449**.

451. End gone. Length, 0.05 m. Diameter of head, 0.0195 m. Edge grooved. Conical knob. Rim (raised) round edge top side of head. Entire pin probably one piece.

452. End gone. Condition poor. Length, 0.05 m. Diameter of head, 0.0195 m. Traces of groove on edge of head. Pin and head as in No. **417**.

[1] Very similar to pin from Lusi, *Jahreshefte*, IV. p. 54, No. 96 (Reichel and Wilhelm).

453. From south slope. End gone. Condition poor. Length, 0.042 m. Diameter of head, 0.0175 m. Knob high and undercut. Edge of head grooved. Pin and head as in No. **417**.

Group vii. Similar to Group vi., but with apparently compound jacket, caused by deeper grooves between the parts; perhaps all from one factory.

454. Most of pin and head gone. Length, 0.029 m. Diameter of head, 0.019 m. Edge of head grooved. Top ring closely attached to head. This pin differs from preceding class only in greater depth of groove. Pin and head as in No. **417**.

455. End gone. Length, 0.049 m. Diameter of head, 0.022 m. Raised rim round top side of head. Raised band round edge of head. Rings similar to No. **454**. First and third from top about equal and larger than others. Lowest three rings smaller than second. Pin and head as in No. **417**.

456. Fragment. Length, 0.02 m. Diameter of head, 0.023 m. Slight raised rim around top of head. Edge of head grooved. Seems separable into (1) head, (2) three rings with connecting parts, (3) corrugation, (4) ring, (5) stem and knob, but probably as in No. **417**.

Group viii. Similar to Group v., but with grooved rings just under head, the upper one being largest. Probably from same factory as Group v.

457. End gone. Length, 0.0685 m. Diameter of head, 0.017 m. All parts separated by slight grooves. Entire pin probably one piece.

458. Pin gone. Length, 0.028 m. Diameter of head, 0.0195 m. Jacket same as No. **457**.

The following have two rings under main corrugation and two at each side of lower corrugation, and are very probably from same factory.

459. End gone. Condition poor. Length, 0.0505 m. Diameter of head, 0.0235 m. Edge of head grooved. Raised rim on upper side. Rings next to corrugation grooved. Pin and head as in No. **417**.

460. End gone. Length, 0.062 m. Diameter of head, 0.021 m. Considerable raised rim on top of head. Edge of head has two grooves.

461. From back of South Building. End gone. Length, 0.0635 m. Diameter of head, 0.0228 m. Raised rim round top of head. Edge of head probably grooved. Head trifle thinner than those of Nos. **459**, **460**. Top ring larger than in No. **460**.

Group ix. Two or more narrow sharply cut rings just under head, and two similar rings on one or both sides of either or both corrugations.

462. Length, 0.138 m. Diameter of head, 0.015 m. Slight raised rim round head. Edge of head grooved. Above each corrugation, grooved ring. Beneath, plain ring. Pin and head as in No. **417**.

463. End gone. Condition poor. Length, 0.076 m. Diameter of head, 0.02 m. Edge of head grooved. Grooved ring just beneath head. Smaller grooved rings, one at either side of each corrugation. Parts crowded together. Pin and head as in No. **417**.

464. Most of pin gone. Length, 0.027 m. Diameter of head, 0.016 m. Slight raised rim round top of head. Beneath head, four rings, or one ring with three grooves. Grooved ring either side of main corrugation. Plain ring either side of lower corrugation. Whole pin probably one piece.

465. Condition poor. End and most of head gone. Length, 0.0555 m. Grooved ring either side of main corrugation and on upper side lower corrugation. Ring on lower side lower corrugation probably simple. Filing showed color medium light. Whole pin one piece.

Group x. Similar to Groups iii. and iv., but with projecting edge or band about centre of main corrugation.

466. Pin mainly gone and about one fourth of head. Length, 0.034 m. Diameter of head, 0.0235 m. Head thin. Pin and head as in No. **417**.

467. From south slope. Most of pin and lower corrugation gone. Length, 0.044 m. Diameter of head, 0.0219 m. Slight raised rim on head. Edge of head, two grooves. Similar to No. **466**. Possibly from same factory, though heads of different style.

468. Point gone. Length, 0.098 m. Diameter of head, 0.017 m. Slight raised rim round head. Head rather thin. Whole pin probably one piece.

Group xi. Similar to Groups iii., iv., v., but with raised grooved ring about centre of corrugation.

469. From back of South Building. Point gone. Corroded. Length, 0.148 m. Diameter of head, 0.021 m. Small ring above corruga-

tions. All grooves shallow, except that next to head, which is of moderate depth. Slight raised rim around head. Edge of head has two grooves. Traces of groove round centre of lower corrugation. Pin probably one piece.

470. From West Building. Most of pin gone. Condition poor. Length, 0.0405 m. Diameter of head, 0.021 m. Slight raised rim. Traces of two grooves round edge of head. Upper corrugation has three grooves. Separating grooves all rather shallow. Pin and head as in No. **417**.

471. Most of pin gone. Condition poor. Length, 0.0415 m. Diameter of head, 0.023 m. Possible traces of groove on edge of head. Also of raised rim. Main corrugation has raised grooved band. Lower corrugation plain. Pin and head as in No. **417**.

472. From back of South Building. End gone. Condition poor. Length, 0.0465 m. Diameter of head, 0.025 m. Slight raised rim. Edge grooved. Upper corrugation has raised grooved band. Lower corrugation plain. Head and pin as in No. **417**.

473. End gone. Length, 0.0525 m. Diameter of head, 0.025 m. Raised rim round head. Two grooves in edge of head. Upper corrugation has raised band with two grooves. Lower corrugation has raised band with one groove. All rings have fine rope-threading. Pin and head as in No. **417**.

474. End gone. Condition poor. Length, 0.0965 m. Diameter of head, 0.0205 m. Raised rim around head, which has two grooves round edge. Upper corrugation with raised grooved band. Lower corrugation plain. Ring beneath head has fine oblique threading. Grooved ring at either side of secondary corrugation. Pin and head as in No. **417**.

475. End and part of head gone. Length, 0.057 m. Diameter of head, 0.023 m. Rather high knob. Grooves shallow. Raised grooved band around main corrugation. Lower corrugation plain. Pin and head as in No. **417**.

Group xii. Similar to Groups vi. and x.

476. From south slope. Most of pin gone. Length, 0.027 m. Diameter of head, 0.0175 m. Groove round edge of head. About centre of corrugation narrow raised band. All grooves shallow. Head and pin as in No. **417**.

477. End gone. Length, 0.048 m. Diameter of head, 0.019 m. Rounded knob. Edge of head grooved. Three rings between head and corrugation. Corrugation has narrow raised band. Grooves shallow. Pin and head as in No. **417**.

478. End gone. Length, 0.06 m. Diameter of head, 0.022 m. Flat undercut knob. Top of head slightly concave. Edge grooved. Corrugation has narrow raised band. Lower corrugation plain. Grooves plain but not deep. Pin and head as in No. **417**.

Group xiii. Similar to Groups vi. or vii., and xi.

479. End gone. Head abraded. Length, 0.0365 m. Diameter of head, 0.0155 m. Low rounded knob, slightly undercut. Main corrugation with prominent raised grooved band. All grooves shallow. Pin and head as in No. **417**.

480. End gone. Condition poor. Length, 0.058 m. Diameter of head, 0.0185 m. Low rounded knob. Edge of head grooved. Both corrugations have raised grooved band. All grooves shallow. Head and pin as in No. **417**.

Group xiv. Two rings just beneath head. One or two rings at each side of the corrugations. Raised grooved band which may also ornament the lower corrugation.

481. Pin gone. Condition poor. Length, 0.0315 m. Diameter of head, 0.0175 m. Low knob. Top of head slightly concave. Edge of head grooved. Lower corrugation with band, with trace of groove. Grooves all shallow. Pin and head as in No. **417**.

482. From back of South Building. Condition poor. Length, 0.032 m. Diameter of head, 0.0165 m. Rim of head raised. Grooved ring beneath head and at either side of each corrugation. Pin and head as in No. **417**.

483. Condition poor. Length, 0.0435 m. Diameter of head, 0.0165 m. Low knob. Lower corrugation plain. Grooved ring at either side of both corrugations. Pin and head as in No. **417**.

484. From south slope. End gone. Length, 0.065 m. Diameter of head, 0.0225 m. Knob flat. Top of head slightly concave. Edge of head has two grooves. Between head and corrugation three rings. Each corrugation has two raised rings. Pin and head as in No. **417**.

485. Point damaged. Head half gone. Length, 0.0915 m. Diameter of head, 0.0185 m. Rounded undercut knob. Each corrugation has raised grooved band. Filing showed color medium light.

Group xv. Three rings of unequal size beneath head. Single ring at each side of corrugations. Grooved band on main corrugation and sometimes on lower one.

486. Most of pin gone. Condition poor. Length, 0.036 m. Diameter of head, 0.0205 m. Low undercut knob. Edge of head grooved. First two rings beneath head larger than third. Lower corrugation plain. Pin and head as in No. **417**.

487. End gone. Length, 0.108 m. Diameter of head, 0.0219 m. Low undercut knob. Rim of head raised. Edge of head grooved. Lower corrugation plain. Pin and head as in No. **417**.[1]

488. From West Building. Length, 0.175 m. Diameter of head, 0.0295 m. Slight raised rim. Rather high round knob. Raised grooved bands on both corrugations. Whole pin probably one piece.

Group xvi. Double groove about main corrugation.

489. Point and part of neck gone. Length, 0.023 m. Diameter of head, 0.022 m. Low undercut knob. Rim of head raised. Edge of head grooved. Single ring beneath head and at either side of main corrugation. Head and pin as in No. **417**.

490. End gone. Length, 0.075 m. Diameter of head, 0.021 m. Round undercut knob. Rim of head raised. Edge of head has raised band, with fine threading. Main corrugation has raised, double-grooved band. Lower corrugation has raised grooved band. Beneath head thick, broad ring with vertical threading. Single ring, with threading on each side of each corrugation. Grooves shallow. Pin and head as in No. **417**. Cf. Group viii.

FORM 2. MORE ADVANCED. ELONGATED JACKET. HEAD LARGE OR MEDIUM SIZE, AND USUALLY THICK.

Class α. Two plain corrugations with single ring at either side of each. Two grooves under head. Represented only by No. **491**.

491. Head gone. Length, 0.151 m. Rectangular knob at top for insertion into head. Groove near ring. Whole fragment probably one piece, though possibly pin inserted.

Class β. Two large rather thin corrugations, with clearly defined ring at either side tending to be completely separated from corrugations. Single similar ring under head.

492. From West Building. End gone. Length, 0.065 m. Diameter of head, 0.018 m. Low slightly undercut knob. Edge of head has two grooves. Rim of head raised. Rings and corrugations plain. Pin and head as in No. **417**.

493. From West Building. End gone. Length, 0.0725 m. Diameter of head, 0.0275 m. Knob rather high and undercut. Edge of head has two grooves; rim raised. Two rings beneath lower corrugation. Lowest ring and ring above each corrugation and band between grooves on edge of head have fine oblique threading. Pin seems to be inserted in jacket, which seems of one piece with head, but this not certain. Possibly from same factory as No. **492**.

494. Pin gone. Length, 0.0385 m. Diameter of head, 0.031 m. Rather high undercut knob. Edge of head has two grooves; rim raised. Top of head decorated with two bands of curved meander pattern, separated by band of circles. Rings and band between grooves on edge of head obliquely threaded. Head and jacket seem one piece. Pin probably of iron.

Class γ. Two or more large plain corrugations of nearly equal size, with single ring on either side.[2]

Group i. No special ring beneath head, there being only one between corrugation and head.

495. Fragment of top. Length, 0.024 m. Diameter of head, 0.034 m. High undercut knob with three grooves. Edge of head has raised band; rim raised. Filing showed stem to be of separate piece from jacket.

Group ii. Single small ring beneath head.

496. Pin gone. Length, 0.048 m. Diameter of head, 0.044 m. Rim of head raised; edge grooved. Two rings between corrugations. Pin of bronze, probably inserted. Head and knob with first ring probably separate piece from jacket.[3]

497. From south slope. End gone. Length, 0.101 m. Diameter of head, 0.023 m. Knob

[1] *Olympia*, No. 485, is quite similar, except that it has double ring at each side of main corrugation.

[2] Cf. archaic Greek pin with three plain knobs, of which middle one is largest, from Megara Hyblaea, published by Orsi in *Mon. Ant. Linc.* I. col. 809.

[3] Somewhat similar are two pins in museum at Florence (Vitrine V), from Borgo S. Sepolcro, 1888.

undercut. Rim of head raised; edge has three grooves. Whole pin probably one piece.

Group iii. Two rings under head, upper one being the larger. Cf. FORM 1, *Class* γ, Group viii.

498. From cutting above Old Temple toward tents. End gone. Length, 0.0285 m. Diameter of head, 0.027 m. High undercut knob. Rim of head raised; edge has two grooves. The two rings above corrugations have fine threading. Probably lower corrugation and its rings were strung on stem.

499. End gone. Length, 0.135 m. Diameter of head, 0.037 m. Knob undercut. Rim of head raised and beveled inside. Edge has three grooves. All small rings have vertical threading. Pin is inserted. Jacket thin. Head and jacket probably all one piece, though perhaps jacket separates from head beneath large top ring.[1]

Class δ. Two plain corrugations with ring above top of one and between them. Next to head, plain neck. Beneath corrugations, sloping surface, upper end of which rises abruptly. Below this slope, one or more rings.

500. Pin gone, bottom of jacket injured. Length, 0.026 m. Diameter of head, 0.0165 m. Grooves on edge cut unevenly, so one does not go all round. Lower corrugation slopes off on lower side. Pin was of iron. Head and jacket probably one piece.

501. Pin gone. Length, 0.028 m. Diameter of head, 0.021 m. In edge of head, two grooves. Raised rim. Long neck. Sloping surface short, followed by ring. Pin of iron. Head and jacket probably one piece.

502. Pin gone. Length, 0.037 m. Diameter of head, 0.0215 m. In edge of head, two grooves. Raised rim. Ring below sloping surface followed by straight surface, with ring in middle and below. Pin of iron. Head and jacket one piece.

503. Pin gone. Length, 0.039 m. Diameter of head, 0.0215 m. In edge of head, two grooves. Raised rim. At base of sloping surface, ring, followed by low convex surface, ending in small ring. Pin of iron. Head and jacket probably one piece.

Addendum. The following number may perhaps be placed here.

504. From cutting above Upper Temple toward tents. Pin gone. Length, 0.0205 m. Diameter of head, 0.0155 m. One corrugation with three rings above, the middle one being largest, and three below, the lowest being largest. Top of head slightly concave. Three grooves on edge. Band between two upper grooves has vertical thread. Same on all rings except bottom one. Pin of iron. Probably head and jacket one piece.

Class ε. Similar to δ, but with closely engraved lines on one or more corrugations and rings.

505. Pin gone. Length, 0.034 m. Diameter of head, 0.02 m. Knob conical, undercut. Edge of head with three grooves. Band between two upper has fine horizontal and oblique nicking. Raised rim. Neck straight. Round centre of main corrugation raised nicked band. Rings between corrugations nicked. Sloping surface convex. At bottom, two rings. Head and jacket probably one piece. Pin of iron.

506. Head and pin gone. Length, 0.036 m. Two large corrugations, each with raised nicked band. Between and above corrugations single nicked ring. Sloping surface has nicked ring at bottom, and nicking at upper edge. Jacket probably one piece. Pin of iron. Filing showed medium color.

507. Pin gone. Length, 0.049 m. Diameter of head, 0.0255 m. Conical undercut knob. Edge of head has three grooves. Upper band nicked. Raised rim. Band in corrugations and rings above same nicked. Sloping surface has nicked upper edge and nicked ring, below which two other rings. Head and jacket probably one piece. Probable traces of iron pin.

Class ζ. Similar to Class δ, but with corrugations ornamented. Upper one by heavy oblique grooves, arranged in groups of three. Lower one by antithetic semicircles.

508. Pin gone. Length, 0.048 m. Diameter of thread, 0.029 m. Knob conical, undercut. Surface of top convex. Raised rim. Band round edge nicked. Iron pin. Head and jacket probably one piece.

Class η. Similar to Class ζ, but with deep perpendicular lines in corrugations, and with one or more rings under head.

Group i. One ring under and probably attached to head.

PLATE LXXXII.

509. Pin gone. Length, 0.042 m. Diameter of head, 0.0255 m. Round undercut knob.

[1] Pin confused in photograph with head of No. **531**.

Edge has three rings. Raised rim. Within each of grooves on corrugations are three finer grooves, sometimes four. Pin probably of iron.

Group ii. Two rings under head, of which upper is larger. Probably not attached.

510. End gone. Length, 0.073 m. Diameter of head, 0.037 m. Knob made of two superposed cones with cylindrical cap. Upper cone has grooves radiating from cap. Each groove surrounded by line. Lower part of knob has fine lines. Top of head slightly concave. Raised rim on lower side of head also. Edge has band round centre, from which run toward each rim grooved ornament. Below second ring, short neck, followed by line of cleavage, showing jacket separable at this point. Corrugations as in No. **509**. Sloping surface slightly concave. Ornamented with pattern similar to knob. Pin of iron.

511. Pin and head gone. Length, 0.0465 m. Similar to jacket of No. **510** below division. Pin probably of bronze.

Class θ. Two corrugations with vertical lines. Above, between head and corrugations, two small rings. Between corrugations, two similar rings. Beneath, one or two rings. Rim as before. Head grooved.

Group i. Head has two grooves.

(*a'*.) One ring beneath corrugations.

512. From south slope. Length, circ. 0.155 m. Diameter of head, 0.023 m. Knob deeply undercut. Raised rim. On main corrugation, grooves in groups of three. On lower, in groups of two.

513. From south slope. End gone. Length, 0.067 m. Diameter of head, 0.023 m. Grooves on both corrugations in groups of two.

514. Pin gone. Length, 0.0265 m. Diameter of head, 0.0235 m. Grooving coarse. Pin was inserted.

515. Point and lower part of jacket gone. Length, 0.141 m. Diameter of head, 0.021 m. Grooving coarse.

516. From south slope. End gone. Length, 0.0965 m. Diameter of head, 0.0217 m. Lines on corrugations oblique from right to left. Lowest ring part of same piece with pin. Corrugations appear as though strung.

517. From south slope. Pin and lower part of head gone. Length, 0.02 m. Diameter of head, 0.0215 m. Grooving oblique from right to left. Filing showed medium light color, and no trace of composite structure.

518. From south slope. End gone. Length, circ. 0.145 m. Diameter of head, 0.0155 m. Slight groove below lowest ring, as though pin were inserted there.

519. Length, 0.143 m. Diameter of head, 0.021 m. Grooves oblique. Lowest ring seems to go with pin.

520. End gone. Length, 0.05 m. Diameter of head, 0.0135 m. Grooves slightly oblique. Lowest ring belongs to pin.

521. From West Building. Length, 0.155 m. Diameter of head, 0.022 m. Unbroken.

(*b'*.) Two rings beneath corrugations.

522. From West Building. End gone. Length, 0.1015 m. Diameter of head, 0.023 m. Grooves slightly oblique. Ring below lower corrugation faintly grooved.

523. End gone. Condition poor. Length, 0.143 m. Diameter of head, 0.021 m. Grooves oblique.

Group ii. Head has three grooves. Rim raised and beveled.

(*a'*.) One ring beneath lower corrugation.

524. End gone. Length, 0.088 m. Diameter of head, 0.0205 m. Grooves on corrugations in groups of three, one group of four on lower corrugation.

525. From West Building. End gone. Length, 0.08 m. Diameter of head, 0.018 m. Lowest ring seems to belong to pin.

526. Pin gone. Length, 0.026 m. Diameter of head, 0.021 m. Grooves in groups of three, one group of two on upper corrugation. Pin seems to have been of copper.

527. From West Building. End gone. Length, 0.0865 m. Diameter of head, 0.021 m. Lower ring seems to belong to pin.

528. From south slope. End gone. Length, 0.087 m. Diameter of head, 0.02 m.

529. From West Building. End gone. Length, 0.072 m. Diameter of head, 0.022 m.

530. End gone. Length, 0.111 m. Diameter of head, 0.29. Rings have fine vertical cuts.

531. Cf. No. **499**, note. End gone. Length, 0.147 m. Diameter of head, 0.04 m. Pin has slight groove at joining with lowest ring and seems separate.[1]

532. End gone. Length, 0.075 m. Diameter of head, 0.017 m.

[1] Cf. *Olympia*, No. 481, for form and size.

533. End gone. Length, 0.073 m. Diameter of head, 0.021 m.

534. End gone. Length, 0.094 m. Diameter of head, 0.025 m.

535. End gone. Length, 0.044 m. Diameter of head, 0.0185 m.

536. End gone. Length, 0.115 m. Diameter of head, 0.0235 m. Rings have oblique threading.

537. End gone. Length, 0.068 m. Diameter of head, 0.0175 m. Lowest ring seems to go with pin.

538. End gone. Length, 0.11 m. Diameter of head, 0.016 m. Lowest ring seems to go with pin. Grooves on lower corrugations closer than on upper.

539. From West Building. Length, 0.138 m. Diameter of head, 0.018 m. Top of head slightly concave.

540. Length, 0.059 m. Diameter of head, 0.018 m. Lowest ring probably goes with pin.

541. End gone. Length, 0.095 m. Diameter of head, 0.02 m. Lowest ring probably goes with pin.

542. End gone. Length, 0.0425 m. Diameter of head, 0.0195 m.

543. End gone. Length, 0.0765 m. Diameter of head, 0.019 m.

544. End gone. Length, 0.0835 m. Diameter of head, 0.0165 m. Lowest ring probably goes with pin.

545. End gone. Length, 0.0705 m. Diameter of head, 0.017 m. Top ring larger than usual and shows trace of groove.

546. End gone. Length, 0.0875 m. Diameter of head, 0.021 m.

547. From back of South Building. Pin gone. Knob injured. Length, 0.028 m. Diameter of head, 0.019 m. Pin probably was of iron.

548. From West Building. End gone. Length, 0.15 m. Diameter of head, 0.021 m. Lowest ring probably goes with pin.

549. From back of South Building. End gone. Length, 0.0825 m. Diameter of head, 0.0205 m. Corrugations rather thick.

550. End gone. Length, 0.083 m. Diameter of head, 0.021 m.

551. From back of South Building. End and lower part of jacket gone, also part of head. Length, 0.0255 m. Diameter of head, 0.0185 m.

552. From West Building. End gone. Length, 0.063 m. Diameter of head, 0.019 m.

553. Pin corroded. Length, 0.173 m. Diameter of head, 0.0205 m. Rim has convex beveling. Lowest ring probably goes with pin, and possibly pin inserted into lowest corrugation.

554. End gone. Length, 0.0815 m. Diameter of head, 0.02 m. Knob undercut and resting on a raised base. Lowest ring seems to go with pin.

555. From West Building. Present point not original. Length, 0.118 m. Diameter of head, 0.0175 m. Only one ring between corrugations.

(b'.) Two rings beneath corrugation. Only one uncertain example.

556. From south slope. Pin and about half of head gone. Length, 0.03 m. Diameter of head, 0.022 m. Filing showed color medium light, and no trace of composite structure.

Group iii. Head has four grooves.

557. End and lower part of jacket gone. Length, 0.022 m. Diameter of head, 0.026 m.

Addenda. Pins of this class with heads broken off. One ring beneath lower corrugation. Lower corrugation only preserved.

558. From back of South Building. Length, 0.156 m. Filing showed color medium light.

559. Point gone. Length, 0.0825 m. Ring beneath corrugations double usual width.

560. Point gone. Length, 0.1145 m.

561. Point gone. Length, 0.0985 m. Both corrugations preserved.[1]

562. Point gone. Preserved through first ring above upper corrugation. Length, 0.05 m.

563. Point gone. Length, 0.086 m.

564. Point gone. Length, 0.083 m.

565. Point gone. Length, 0.111 m.

566. Point gone. Length, 0.085 m.

567. Point gone. Length, 0.0975 m.

FORM 3. ADVANCED. RATHER SHORT CROWDED JACKET. LARGE, RELATIVELY THIN HEAD.

Class α. Two plain corrugations; upper with ring on lower sides; lower has ring on each side. Below, foot with slight concavity in middle.

568. Pin gone. Length, 0.0205 m. Diameter of head, 0.02 m. Low flat rim, groove near edge on top. Edge of head grooved. Upper corrugation the largest. Traces of iron pin.

[1] With the following cf. *Olympia*, No. 487, which is not said to be headless.

Class β. Two plain, broad, slightly rounded corrugations. Between head and upper corrugation, three rings (or a flat corrugation with two grooves). Between corrugations, two rings of similar construction, and two similar rings beneath lower corrugation. In highest group of rings, grooves less deep than in two lower groups.

569. From West Building. Pin gone. Length, 0.038 m. Diameter of head, 0.0325 m. Edge of head has two grooves. Remains of iron pin. Jacket probably all one piece.

Class γ. Two corrugations with flat raised ring about centre and ring (attached) at either end. Edge of head recedes downward in two steps.

570. Length, 0.144 m. Diameter of head, 0.0225 m. Rim raised very little. First step (next head) on lower side head higher than second. Both are notched obliquely on edge. Neck between head and first corrugation thicker than neck between the corrugations. Upper corrugation continued beyond its lower ring. Edges of rings and bands on corrugations notched. Head and upper corrugation seem one piece. Possible that pin passes through lower corrugation into upper one; also possible that jacket is of one piece.

Class δ. One or two ornamental corrugations. Knob conical.

Group i. Upper corrugation has raised ring at centre. Ring between head and corrugation. Beneath corrugation, two rings. Below, small plain corrugation, followed by ring.

571. Pin gone. Length, 0.024 m. Diameter of head, 0.025 m. Raised rim. Lower edge of head notched. Upper three rings and band on corrugations notched. Remains of iron pin.

Group ii. Upper corrugation has raised grooved ring and ring at either side. Lower corrugation has raised ring and ring at either side. Beneath, a broad and a narrow ring. Probably all from the same factory.

572. Pin gone. Length, 0.038 m. Diameter of head, 0.036 m. Raised rim. Lower edge of head notched. Lower corrugation much smaller than upper. Bands on corrugations and all rings except top one notched. Pin probably was of iron. Head and jacket probably one piece.

573. Pin gone. Length, 0.033 m. Diameter of head, 0.031 m. Raised rim. Lower edge of head notched. Jacket similar to that of No. **572**, but lower corrugation larger. Pin probably of iron.

574. Pin gone. Length, 0.035 m. Diameter of head, 0.0335 m. Inside beveled rim of head, a notched band. Top of head slightly convex. Edge of head has two grooves. Jacket similar to that of No. **573**. Remains of iron pin.

575. From cutting upon hill toward tents above Old Temple. Length, 0.034 m. Diameter of head, 0.036 m. Rim and band on head similar to No. **574**. Edge has two grooves with band between notched. Jacket similar to that of No. **574**. All rings notched. Pin probably of iron.

FORM 4. PINS OF VARIOUS STAGES OF DEVELOPMENT, USUALLY WITH SHORT CROWDED JACKET AND THICK HEAD.

Class α. With one, two, or three plain corrugations. Beneath these usually one or more rings.

Group i. Simple style, with two plain corrugations. With or without ring or rings beneath.

576. Point gone. Length, 0.0525 m. Diameter of head, 0.009 m. Knob on head looks like projecting stem, but under side of head looks like one piece with neck. Corrugations and pin probably one piece.

577. Point gone. Length, 0.0765 m. Diameter of head, 0.011 m. Round edge on top row of dot in circles. Edge grooved. Ring grooved. Head seems of one piece with pin. Whole pin probably one piece.

The two following fragments probably belong here.

578. Head gone. Length, 0.041 m.

579. Head and end gone. Length, 0.057 m. Two small rings between corrugation.

Group ii. One corrugation. Beneath, two or more rings. Head usually only slightly larger than corrugation and rings.

(a'.) Rather crowded.

580. From south slope. Length, 0.067 m. Diameter of head, 0.0065 m. Edge of head has two grooves. Filing showed medium color. Whole pin probably one piece.

581. From south slope. End gone. Length, 0.031 m. Diameter of head, 0.0085 m. Traces of four grooves on edge of head.

582. End gone. Length, 0.038 m. Diam-

eter of head, 0.009 m. Edge of head has two grooves.

(*b'*.) Less crowded.

583. End gone. Length, 0.0275 m. Diameter of head, 0.06 m.

584. End gone. Length, 0.062 m. Diameter of head, 0.0095 m. Rim slightly raised. On top marks that look like letters, but probably not. Edge of head has two grooves. Whole pin probably one piece.

585. Length, 0.0987 m. Diameter of head, 0.011 m. Low raised rim beveled inside. Edge of head has one groove. Corrugation ring has two grooves.

586. Point gone. Length, 0.127 m. Diameter of head, 0.012 m. Edge of head has five grooves. Corrugation ring has three grooves. Head and jacket taper downward. Possibly head and beads are strung.

Group iii. One plain corrugation, beneath which one or more rings. Head broader, proportionally, than in Group ii.

587. Length, 0.096 m. Diameter of head, 0.008 m. Edge of head has two grooves. Two rings below corrugation.

588. Tip gone. Length, 0.062 m. Diameter of head, 0.0094 m. Slightly raised rim. Edge of head has two grooves. Beneath corrugation, three rings, the lowest being raised end of pin.

589. Bent. Length, 0.097 m. Diameter of head, 0.0085 m. Head has four grooves. Below corrugation, grooved ring and two plain rings. Whole pin probably solid.

Group iv. Similar to Group iii., but with two corrugations, usually with ring or rings beneath.

(*a'*.) Without rings. Corrugation plain.

590. Length, 0.085 m. Diameter of head, 0.007 m. Edge of head has two grooves. Space between head and upper corrugation narrow. Lower corrugation smaller than upper. Perhaps belongs to Group iii.

591. Condition poor. Length, 0.0225 m. Diameter of head, 0.012 m. Edge of head has two grooves. Corrugations look separable.

592. Present end not original. Length, 0.044 m. Diameter of head, 0.0115 m. Edge of head has two grooves. Stem of jacket larger than pin at top.

(*b'*.) With one ring.

593. End gone. Length, 0.02 m. Diameter of head, 0.0075 m. Edge of head has one groove (perhaps two). Ring about half as large as lower corrugation. Stem of jacket larger than pin.[1]

594. Length, 0.059 m. Diameter of head, 0.0055 m. Edge of head has three grooves. Whole pin probably one piece.

595. End gone. Length, 0.022 m. Diameter of head, 0.009 m. Edge of head has at least two grooves. Lower corrugation smaller than upper. Stem of jacket larger than pin.

596. End gone. Length, 0.058 m. Diameter of head, 0.014 m. Edge of head has three (perhaps four) grooves. Lower corrugation has two grooves and band between of rectangles. Jacket and stem taper downward from head.

(*c'*.) With two rings (really perhaps a grooved corrugation).

597. End gone. Length, 0.059 m. Diameter of head, 0.011 m. Grooving on edge of head doubtful. Beneath lower corrugation grooved ring, of which lower part forms end of pin. Jacket tapers downward and has stem larger than top of pin. Whole pin probably one piece.

598. End gone. Length, 0.069 m. Diameter of head, 0.012 m. Edge of head has two grooves.

599. From West Building. End gone. Length, 0.045 m. Diameter of head, 0.0123 m. Edge has two grooves. Stem of jacket larger than head of pin and tapers.

600. Head of pin. Length, 0.0135 m. Diameter of head, 0.013 m. Two grooves in edge. Under side of head convex. Traces of iron pin.

601. Most of pin gone. Length, 0.018 m. Diameter of head, 0.0145 m. Two grooves in edge. Pin of bronze. Stem of jacket larger than pin.

602. Point gone. Length, 0.071 m. Diameter of head, 0.0145 m. Top of head slightly concave; rim raised. Edge of head tapers downward, and has two grooves. Stem of jacket larger than pin. Head and jacket taper concavely.

603. Pin gone. Length, 0.0205 m. Diameter of head, 0.02 m. Top of head concave. Knob on low base and outside it band of small circles. Edge of head tapers, and has two grooves. Jacket tapers (slightly concave). Pin of iron.

604. Pin gone. Length, 0.0155 m. Diameter of head, 0.019 m. Around knob, band of spiral maeander. Top of head concave. Edge of head tapers concavely and has two grooves. Lower edge finely notched. Lowest ring notched on upper edge. Remains of iron pin.

[1] Cf. the somewhat similar bronze pin from Villanova (iron age), Montelius, *Civ. Prim. It.* pl. 91, fig. 5.

605. From back of South Building. Pin gone. Length, 0.0185 m. Diameter of head, 0.016 m. Around bottom of knob, band of circles. Top of head concave, with slight rise in centre. Edge of head tapers downward, and has two grooves. Head and jacket taper concavely. Remains of iron pin. Probably from same factory as No. **606**.

606. Pin gone. Length, 0.0215 m. Diameter of head, 0.0188 m. Knob rests on base, on which band of circles. Edge of head tapers downward, and has two grooves. Head and jacket taper concavely. Remains of iron pin.

607. Pin gone. Length, 0.022 m. Diameter of head, 0.0185 m. Top of head concave, with rise in centre. Edge of head stepped. Remains of iron pin.

608. Pin gone. Length, 0.024 m. Diameter of head, 0.022 m. Top of head concave. In edge, two grooves. Band between them notched. Corrugations have oblique grooves. Head and jacket probably one piece.

In the following number the second corrugation and the grooved ring have changed places.

609. Pin gone. Length, 0.0155 m. Diameter of head, 0.012 m. Top of head slightly concave. In edge, two grooves. Jacket tapers irregularly. Remains of bronze pin. Color medium.

(*d'*.) With raised band between the two rings.

610. Pin gone. Length, 0.016 m. Diameter of head, 0.0105 m. Knob nearly cylindrical with groove across top. Top of head concave; edge has three grooves and perhaps four. Head and jacket taper. Stem of jacket tapers. Color medium.

611. Most of pin gone. Length, 0.0335 m. Diameter of head, 0.0122 m. Rim of head raised. In edge, two grooves. Band between them nicked. Lower ring nicked.

Group v. Three corrugations and grooved ring. Corrugations plain.

PLATE LXXXIII.

612. From back of South Building. End gone. Length, 0.064 m. Diameter of head, 0.0125 m. Edge of head one groove. Taper downward from middle corrugation.

613. Pin gone. Length, 0.027 m. Diameter, of head, 0.0205 m. Top of head concave, with slight rise in centre. Edge of head stepped, as in No. **607**. Corrugations decrease in size downward. Remains of iron pin. Probably from same factory as No. **607**.

Addenda.

614. Pin gone. Length, 0.0165 m. Diameter of head, 0.016 m. Top of head concave, with raised rim. Edge of head has one groove. Middle corrugation thickest. Edges of all corrugations notched. Remains of iron pin.

615. From back of South Building. Pin gone. Length, 0.016 m. Diameter of head, 0.019 m. Top slightly concave. Edge of head tapers downward, and has two grooves. Pin of iron.

Class β. One or more broad corrugations with rings.

Group i. Simple. One broad plain corrugation, with one or two rings (or grooved ring-corrugation) at either side. Some of the heads thin.

(*a'*.) Upper ring single.

616. Point gone. Length, 0.0555 m. Diameter of head (corroded), 0.055 m. One ring above corrugation, grooved ring below. Groove at top of pin where it joins grooved ring.

(*b'*.) Both rings double.

617. From back of South Building. Pin bent. Length, 0.0885 m. Diameter of head, 0.007 m. No knob. Edge of head grooved.

618. Most of pin gone. Length, 0.0165 m. Diameter of head, 0.013 m. Band of dotted circles on top of head at edge.

619. End gone. Length, 0.041 m. Diameter of head, 0.0115 m. Faint groove in edge.

620. Point gone. Length, 0.066 m. Diameter of head, 0.0105 m. Stem of jacket larger than pin.

621. End gone. Length, 0.053 m. Diameter of head, 0.0105 m. Edge of head grooved. Jacket tapers downward from upper ring.

Group ii. Kindred miscellaneous forms.

622. Point blunted. Length, 0.09 m. Diameter of head, 0.01 m. Rim of head raised; edge grooved and lower edge notched. Two plain corrugations, of which the upper is the larger. It has notched ring on either side. Small ring beneath lower corrugation.

623. Point gone. Length, 0.0785 m. Diameter of head, 0.0145 m. Edge of head has two grooves. One large spherical corrugation, above which heavy ring. Below, two groups of rings, the upper of three, the lower of two. Stem of

jacket larger than pin. Whole pin seems to be of one piece.

624. End gone. Length, 0.045 m. Diameter of head, 0.018 m. Edge of head has one groove. Under side of head has flat, slightly elevated surface. Two corrugations; upper, the larger, with raised grooved ring. Ring on either side of each corrugation.

Group iii. Two corrugations, of which one or both is thick. Usually ornamented with raised bands, which may be grooved. Rings above, below, and between.

(*a'*.) Both corrugations ornamented with raised band. Above upper and beneath lower corrugation, and also between corrugations, a single ring.

625. From south slope. Pin gone. Length, 0.0255 m. Diameter of head, 0.0175 m. Knob conical. Top of head deeply concave, with centre raised above rim. Edge of head grooved. Lower edge notched, as also bands on corrugations and lowest ring. Remains of iron pin. Head and jacket seem one piece.

626. Pin gone. Length, 0.0275 m. Diameter of head, 0.0215 m. Knob cylindrical. Edge of head has two grooves, with band between notched vertically. All bands and rings notched. Remains of bronze pin. Head looks welded to jacket.

(*b'*.) Two plain corrugations, with single ring above and below each.

627. Point gone. Length, 0.0865 m. Diameter of head, 0.009 m. Top of head concave. Edge of head has two grooves, with band between notched. Possible traces of notching on rings.

(*c'*.) Upper corrugation has raised band. Otherwise same as above.

628. End gone. Length, 0.046 m. Diameter of head, 0.0127 m. Top of head slightly concave. Edge of head has one groove and tapers downward.

629. Point gone. Length, 0.094 m. Diameter of head, 0.013 m. Rim of head slightly raised and edge has two grooves. Lowest ring forms top of pin.

630. From West Building. End gone. Head damaged. Length, 0.059 m. Diameter of head 0.011 m. Upper corrugation about twice the size of lower and has low raised band.

631. End gone. Length, 0.05 m. Diameter of head, 0.014 m. Edge of head has one groove and tapers downward; rim beveled. Lower rim of head notched, as also band on corrugation, and rings.

632. Length, 0.128 m. Diameter of head, 0.0115 m. Head, corrugations, and rings same as in No. **631**.

633. Pin gone. Head damaged. Length, 0.0225 m. Diameter of head, 0.0175 m. Top of head depressed. Knob on base. Head, corrugations, and rings probably same as in No. **631**. Remains of iron pin.

(*d'*.) Similar. Upper corrugation has raised grooved band, lower has plain band.

634. End gone. Condition poor. Length, 0.069 m. Diameter of head, 0.0145 m. Edge of head has two grooves. Band between has fine notching. Stem much larger than jacket.[1]

(*e'*.) Similar. Both corrugations have raised grooved band.

635. Pin gone. Head much corroded. Length, 0.03 m. Diameter of head, 0.0215 m. Rim of head raised and top concave. Edge of head has two grooves. Uncertain whether pin of bronze or iron.

636. Pin gone. Length, 0.042 m. Diameter of head, 0.0255 m. Top of head has two concave circular surfaces. Edge of head has two grooves. Beneath lower ring of lower corrugation, another ring and small corrugation. Remains of iron pin.

The following may belong with either (*d'*) or (*e'*).

637. Pin and lower part of jacket gone. Length, 0.021 m. Diameter of head, 0.025 m. Edge of head has three grooves; lower band notched. Ring on either side of corrugation. Bands on corrugation notched.

638. From West Building. Pin and lower part of jacket gone. Length, 0.002 m. Diameter of head, 0.0265 m. Edge of top tapers and has two grooves with notched band. Band on corrugation notched. Filing showed color medium.

(*f'*.) Two plain corrugations, with ring at either end of each and another ring just under head.

639. End gone. Head corroded. Length, 0.0425 m. Edge of head has one groove.

640. Most of pin gone. Head corroded. Length, 0.0235 m. Diameter of head, 0.0145 m. Filing showed color medium. Pin probably all one piece.

[1] Very similar, *Olympia*, No. 484.

641. Most of pin gone. Length, 0.0285 m. Diameter of head, 0.011 m. Edge of head has three grooves.

(*g'*.) Similar. Upper corrugation has raised grooved band. Lower has plain raised band.

642. Most of pin gone. Length, 0.035 m. Diameter of head, 0.0155 m. Edge of head has two grooves.

643. From south slope. End gone. Length, 0.0635 m. Diameter of head, 0.0215 m. Rim raised. Edge of head has two grooves with notched band. All rings and bands notched. Pin was inserted.

(*h'*.) Similar. Both corrugations have raised grooved bands.

644. End gone. Length, 0.082 m. Diameter of head, 0.0155 m. Edge of head has two grooves with band perhaps notched.

The following, No. **645**, possesses an elementary form of the head-ring, and may be placed under either (*g'*) or (*h'*).

645. Pin and lower part of jacket gone. Length, 0.025 m. Diameter of head, 0.026 m. Rim raised; edge of head has two grooves with notched band. Filing showed color medium.

(*i'*.) Similar. Upper corrugation has raised double groove; lower corrugation has raised single groove.

646. End gone. Length, 0.088 m. Diameter of head, 0.0215 m. Knob on notched base. Edge of head has two grooves and notched band.

Class γ. One rather large corrugation. Above, a single ring or ring-corrugation, which may be grooved. Beneath, two or more rings or ring-corrugations.

Group i. Single ring between corrugation and head.

(*a'*.) Single grooved ring beneath corrugation. Edge of head grooved. Corrugation plain.

647. From south slope. End gone. Length, 0.056 m. Diameter of head, 0.0105 m. Edge grooved.

648. End gone. Length, 0.045 m. Diameter of head, 0.0117 m. Row of dotted circles on top of head. Edge grooved.

(*b'*.) Corrugation with raised notched band. Beneath, small plain corrugation with heavy ring at each side.

649. From back of South Building. Pin gone. Length, 0.028 m. Diameter of head, 0.021 m. Top of head concave, and lower rim probably notched. Under side of head stepped. Upper and lowest ring have notches on both edges. Remains of iron pin.

(*c'*.) Corrugation plain; beneath, three rings, the middle being thickest and grooved.

650. From back of South Building. Length, 0.158 m. Diameter of head, 0.015 m. Top of head concave. Edge of head tapers downward concavely and has four grooves. Rest of jacket tapers convexly. Traces of notching on the three single rings.

Group ii. With double or grooved ring between corrugation and head.

The following, Nos. **651**, **652**, have only one ring beneath corrugation, but the general appearance and style resemble the others. Corrugation plain.

651. End and most of head gone. Length, 0.0335 m. Small knob resembling end of stem. Filing showed color medium.

652. End gone. Length, 0.032 m. Diameter of head, 0.0095 m. Edge of head grooved. Stem about same size as pin. Probably all one piece.

The following, No. **653**, has beneath corrugation a grooved ring above rectangular block.

653. From south slope. End and part of head. Length, 0.052 m. Diameter of head, 0.0095 m. Stem about same size as pin. Rectangular block has grooved collar.

(*a'*.) Simple. Plain corrugation with grooved ring above and below.

654. End gone. Point not original. Length, 0.049 m. Diameter of head, 0.0095 m. Edge of head grooved. Stem of jacket about same size as pin. Whole pin probably one piece.

655. Point gone. Condition poor. Length, 0.064 m. Diameter of head, 0.0115 m.

656. From south slope. End gone. Length, 0.0475 m. Diameter of head, 0.012 m.

657. End gone. Length, 0.0705 m. Diameter of head, 0.0108 m. Edge of head grooved, and on top ring of dotted circles.

(*b'*.) Similar, but more advanced, and with single ring added underneath.

658. End gone. Length, 0.061 m. Diameter of head, 0.014 m. Edge of head has two grooves. Jacket tapers downward. Stem of jacket larger than pin.

659. From south slope. Length, 0.022 m. Diameter of head, 0.0135 m. Edge of head

grooved. Jacket similar to that of No. **658**. Stem of jacket slightly larger than pin. Filing showed color medium.

(c'.) Similar to last, but with two rings underneath. Second ring small and grooved.

660. End gone. Point not original. Length, 0.059 m. Diameter of head, 0.0155 m. Edge of head has two grooves. Jacket tapers downward convexly. Stem of jacket larger than pin. Pin probably one piece.

(d'.) Beneath corrugation, smaller one with plain ring on either side. (Cf. No. **649**.) Uppermost ring grooved as before.

661. End gone. Length, 0.059 m. Diameter of head, 0.0165 m. Top of head slightly concave. Edge of head has two grooves. First three members of jacket have nearly same diameter; last two taper. On lower side of top ring, and on first ring beneath main corrugation, and on bottom ring, traces of notching. Pin seems inserted into lowest ring. Probably from same factory as No. **662**.

662. Pin gone. Length, 0.024 m. Diameter of head, 0.0165 m. Edge of head has two grooves, with notched band between. Jacket similar to that of No. **661**.

Class δ. Head assimilated to jacket, which (including head) consists of two or three members placed close together, and tapers downward slightly.

Group i. Two members in jacket. Upper thin and plain. Lower thicker and with two grooves.

663. From south slope. End gone. Length, 0.0805 m. Diameter of head, 0.011 m. Stem projects through top.

Group ii. Three members tapering slightly downward. Upper and lower ones grooved.

(a'.) Middle member plain, top plain.

664. End gone. Condition poor. Length, 0.0425 m. Diameter of head, 0.01 m. Edge of head has three grooves.

(b'.) All three members grooved. Knob on top.

665. From south slope. Most of pin gone. Length, 0.018 m. Diameter of head, 0.0105 m. Edge of head has two grooves. Second and third members also two each.

(c'.) Middle member plain. Eyelet on top.

666. From West Building. End gone. Length, 0.114 m. Diameter of head, 0.009 m. Height of eyelet, 0.0025 m. Head has four grooves. Lowest member two. Pin probably separate from jacket.

Unclassified addenda to **Type f**.

667. From south slope. Head and corrugations preserved. Length, 0.0215 m. Diameter of head, 0.022 m. In centre of top of head, rectangular opening as though punched through from below. Stem projects. On top surface of head, rosette. Rim raised. Close to rim, very fine zigzag. Stem and corrugation are of iron.[1]

668. From south slope. End and head gone. Length, 0.118 m. Cf. Nos. **460** and **485**. In top, hole, looking as if upper part of jacket had been fitted to it.

669. Most of pin gone, and perhaps a head also. Length, 0.0295 m. Stem projects through top. Lower ring has traces of notching. Jacket seems to be of one piece.

Discards of **Type f**: sixty-five, of which two from back of South Building, and one from south slope.

Type g. Headless. Jacket of two corrugations, one or both of which are ornamented, and have on either side a ring.[2] On top, an eyelet.

Form 1. Ornamentation encircles corrugations horizontally.

Class α. Upper corrugation has raised band.

Group i. Lower corrugation plain.

(a'.) All rings and bands plain.

670. Eyelet broken. End gone. Length, 0.051 m. Diameter of upper corrugation, 0.013 m. (Cf. No. **699**.)

671. Most of pin gone. Length, 0.0235 m. Diameter of upper corrugation, 0.012 m.

672. Point probably gone. Length, 0.1055 m. Diameter of upper corrugation, 0.012 m.

(b'.) All rings have fine notching.

673. Length, 0.144 m. Diameter of upper corrugation, 0.015 m. Stem of jacket larger than pin.

674. Point gone. Length, 0.1275 m. Diameter of upper corrugation, 0.017 m. Pin possibly inserted.

Group ii. Both corrugations have raised grooved band.

675. End gone. Eyelet broken. Length, 0.076 m. Diameter of upper corrugation, 0.012 m. Stem of jacket larger than pin, which is possibly inserted.

676. End gone. Length, 0.0625 m. Diameter of upper corrugation, 0.0105 m. Stem of jacket larger than pin, which is possibly inserted.

677. Length, 0.123 m. Diameter of upper corrugation, 0.013 m. Stem about same size as top of pin.

Class β. Upper corrugation has raised double (or grooved) band.

Group i. Lower corrugation plain.

678. End gone. Length, 0.037 m. Diameter of upper corrugation, 0.012 m. Stem between corrugations smaller than top of pin.

679. From back of South Building. End gone. Length, 0.081 m. Diameter of upper corrugation, 0.0115 m.

Group ii. Lower corrugation has raised band. Bands and rings notched in almost every case.

680. End gone. Length, 0.0675 m. Diameter of upper corrugation, 0.0125 m. Stem same size as pin, which looks inserted.

681. End gone. Length, 0.0395 m. Diameter of upper corrugation, 0.0123 m. Stem same size as pin, which is perhaps inserted.

682. From south slope. Point gone. Length, 0.117 m. Diameter of upper corrugation, 0.012 m.

683. Point probably not original. Length, 0.095 m. Diameter of upper corrugation, 0.012 m. Stem larger than pin. Top of head has grooves from centre to rim.

684. Most of pin gone. Length, 0.0385 m. Diameter of upper corrugation, 0.013 m. Same grooves on top as in No. **683**.

685. End gone. Length, 0.081 m. Diameter of upper corrugation, 0.013 m. Head as in No. **683**.

686. From south slope. End gone. Length, 0.098 m. Diameter of upper corrugation, 0.0125 m. Head as in No. **683**. Pin perhaps inserted.

687. Most of pin gone. Length, 0.047 m. Diameter of upper corrugation, 0.0135 m. Head as in No. **683**.

688. From south slope. End gone. Length, 0.057 m. Diameter of upper corrugation, 0.0165 m. Stem larger than pin. Upper part of pin round. Below, rudely diamond-shaped.

689. End gone. Length, 0.072 m. Diameter of upper corrugation, 0.016 m. Head as in No. **683**. Stem larger than pin.

The following three have or had pins of iron.

690. Pin gone. Length, 0.0195 m. Diameter of upper corrugation, 0.013 m. Top as in No. **683**. Stem larger than pin.

691. From south slope. Pin gone. Length, 0.022 m. Diameter of top corrugation, 0.015 m. Top as in No. **683**. Stem larger than pin.

692. Length, 0.023 m. Diameter of top corrugation, 0.0155 m. Head similar to that of No. **683**, but grooves fewer. On under side of lower corrugation, low flat ring.

The following number has two rings above upper corrugation.

693. End gone. Length, 0.099 m. Diameter of top corrugation, 0.0115. Lower corrugation somewhat larger. Head as in No. **683**. Stem larger than pin.

Class γ. Upper corrugation has raised band with double grooves.

Group i. Lower corrugation plain.

694. End gone. Length, 0.064 m. Diameter of upper corrugation, 0.011 m.

695. End gone. Length, 0.0645 m. Diameter of upper corrugation, 0.012 m. On upper and lower halves of corrugation leaf ornament. Pin perhaps inserted.

Group ii. Lower corrugation has raised grooved band.

696. From back of South Building. End gone. Length, 0.0815 m. Diameter of upper corrugation, 0.0115 m. Head as in No. **683**. Stem larger than pin.

Group iii. Lower corrugation has double grooved band. Double ring beneath lower corrugation.

697. Present point probably not original. Length, 0.092 m. Diameter of upper corrugation, 0.012 m. On both halves of upper corrugation, leaf ornament as in No. **695**. All rings notched.

Form 2. Ornamentation of corrugations vertical.

698. From back of South Building. End gone. Length, 0.134 m. Diameter of upper cor-

[1] For more elaborate rosette, cf. Orsi, 'Necropolis del Fusco,' *Not. degli Scavi*, 1895, p. 169. Orsi sees (note 2) reminiscence of Mycenaean style. Tomb early archaic. Cf. rosettes on bone objects from the Dictaean cave, *British School Annual*, VI. p. 113, fig. 49 (Hogarth), and the gold rosette from a tholos tomb at Praesos, *ibid.* VIII. p. 243 (Bosanquet).

[2] With this type may be compared *Olympia*, No. 488, which is different in style (has vertical grooves and conical apex), and is said by Furtwängler to be of later date.

rugation, 0.014 m. Both corrugations have light double vertical grooves, and on upper side of top corrugation circles between grooves.

Addenda to **Type g**. In the following the eyelets, if such existed, have been lost. This fact, and their peculiar form, renders their classification uncertain, although they probably belong to this type.

699. From back of South Building. End gone. Length, 0.056 m. Diameter of upper corrugation, 0.011 m. Rings small. Upper corrugation plain.[1]

Discards of **Type g**: seven, of which one from south slope.

Type h. Iron pins with round rectangular and polygonal bronze heads.

FORM 1. PIN INSERTED DIRECTLY INTO HEAD WITHOUT ANY NECK.

700. Pin mostly gone. Length, 0.024 m. Diameter of head, 0.019 m. Possibly not a pin, but iron rod with knobs.

The following numbers are of more uncertain classification.

701. From south slope. Pin gone. Length, 0.0135 m. Diameter, 0.014 m. Pierced by rectangular hole, in which are remains of iron pin or rod.

702. From south slope. Pin gone. Length, 0.0135 m. Diameter, 0.0135 m.

FORM 2. PIN INSERTED INTO PROJECTION ON LOWER SIDE OF HEAD.

Pin gone in all examples of Classes *α*, *β*, *γ*, *δ*.

Class α. Round plain heads, mostly with ornament at top.

703. Length, 0.0125 m. Diameter of head, 0.01 m. Length of neck, 0.004 m. Top of head broken as though ornament had been lost. Neck has two grooves. Remains of iron pin.

704. From south slope. Ornament on head injured. Length, 0.019 m. Diameter of head, 0.0125 m. Ornament consists of four petals about a low stem.[2] Remains of iron pin.

705. From south slope. Ornament injured. Length, 0.021 m. Diameter of head, 0.0115 m. Filing showed color medium.

Class β. Similar to Class α, but with polygonal heads.

Group i. Hexagonal.

706. From back of South Building. Ornament injured. Length, 0.019 m. Diameter of head, 0.015 m. Lower neck has three rings, of which central one is notched. Remains of iron pin.

Group ii. Pentagonal.

707. Ornament injured. Length, 0.018 m. Diameter of head, 0.014 m. Filing showed color medium.

708. From south slope. Length, 0.022 m. Diameter of head, 0.016 m. Ornament of five petals about a stem. Lower neck has four rings, of which second from top is notched. Sides of polygon separated by segments of original circumference.

Class γ. Similar, but with rectangular heads.

709. Length, 0.017 m. Ornament injured. Has five petals.

710. Length, 0.018 m. Ornament of five petals injured. Ring beneath notched. Neck has three rings.

711. Length, 0.022 m. Flower of four petals. Heavy ring with notching beneath. Neck has three rings. Traces of iron pin.

712. Length, 0.0225 m. Flower injured; of six petals. Ring beneath notched. Neck has three rings.

In the two following numbers the flower is modified.

713. Ornament not divided (the present fissures due to corrosion). Length, 0.0205 m. Neck has three rings. Traces of iron pin.

714. Length, 0.0175 m. Ornament injured. Neck has three rings. Remains of iron pin.

Class δ. Round and conical heads with sides ornamented. Top with or without ornaments.

Group i. With fluted sides.

715. Length, 0.02 m. Diameter, 0.0155 m. Originally probably had ornament. Sides divided by five grooves. Neck has three rings. Pin probably of iron.

716. Originally probably had ornament. Sides divided by seven grooves. Neck has large corrugation, with ring on either side. Corrugation has eight grooves. Traces of iron pin.

In the following number the grooving is continuous through head and neck, which is not sharply marked from head.

717. Top injured. Length, 0.014 m. Diameter, 0.011 m. In top round hole, in which appears short stub as of stem. Head divided into five main segments. Of these two in the lower

[1] Perhaps No. **670** should be put here.

[2] Professor Norton regards these heads with flower ornament at top as imitations of pomegranates, and refers to Pausanias, II. xvii. 4.

part and one in the upper are subdivided each into two smaller segments.

Group ii. With engraved sides.

(*a'*.) Rounded.

718. Length, 0.0155 m. Diameter, 0.0085 m. Head divided into three parts by zigzags from top to bottom. Neck has three rings, of which the upper two are notched, and below these two others, of which the upper one is notched.

(*b'*.) Conical.

719. Length, 0.0245 m. Diameter, 0.012 m. Head divided into four segments. On these, on lower half, run dotted lines meeting at acute angle just above middle. Dotted circle at base of each segment. Neck has three rings; centre one notched. Filing showed medium color.

Type i. Head separate and has form of animal (lion).

PLATE LXXXIV.

720. From West Building. Pin gone. Length, 0.0425 m. Below lion's head are corrugations separated from it by deep grooves, in the bottom of which low ring. Forehead of lion full, with heavy furrow down centre. Eye sockets round, with prominent brows. Nostrils marked. Muzzle marked with grooves.[1] Lower part of pin head has five corrugations, tapering concavely, and below these a rectangular block.

Type j. Ring headed.

721. From south slope. Length, 0.1165 m. Outer diameter of ring, 0.015 m. Bar of ring diamond-shaped in section. Pin broad and flat at junction with ring.[2]

Type k. Head consists of disk, with or without prolongation above, and, at some distance beneath it, one or two balls, or beads.[3]

FORM 1. NO PROLONGATION OF STEM ABOVE DISK.

Group i. Upper part of shaft round.

722. Length, 0.299 m. Diameter of head, 0.0195 m. Length of neck, 0.044 m. Much copper in pin, shown by color and flexibility.

Group ii. Upper part of shaft rectangular.

723. End gone. Length, 0.138 m. Diameter of head, circ. 0.011 m. Length of neck, 0.034 m. Ball oblong.

724. End gone. Length, 0.185 m. Length of neck, 0.036 m. Head concave in centre. Ring at either end of ball nearly rectangular.

Discard of Group ii.: one fragment.

FORM 2. SHAFT HAS SHORT EXTENSION ABOVE DISK.[4]

Class a. One ball.

Group i. Entire shaft round.

Extension above disk short, and so far as preserved consisting of single section.

725. End broken. Length, 0.078 m. Extension, 0.005 m. Neck, 0.015 m. Extension rather thick. Neck smaller than body. Ball nearly round, with ring at either side.

726. Present point probably not original. Length, 0.112 m. Extension, 0.007 m. Neck, 0.016 m. Extension rather flat. Neck smaller than shaft. Ball elongated.

727. Condition poor. Shaft and extension both broken. Length, 0.0525 m. Neck, 0.015 m. Neck slightly thicker than shaft. Ball nearly round, with ring at either side.

Group ii. Neck round. Upper part of shaft beneath ball rectangular.

(*a'*.) Thick extension, of one section, rounded at the top, and resting on low base.

728. Condition poor. Shaft mostly gone. Length, 0.054 m. Extension, 0.0075 m. Neck, 0.019 m. Ball oblate, with ring at either side.[5]

(*b'*.) Extension which rests on base, with flat cap on top which overhangs the tapered upper portion of the extension. Rectangular part of shaft usually ornamented with engraved zigzag and separated from round part by one or more grooves.

729. End gone. Condition poor. Length,

[1] For classification see III. 5, **Type b** (p. 203, above).

[2] Similar (but for swelling of shaft), Montelius, *Civ. Prim. It.* pl. 15, No. 12, from Terramare of Campeggine of Reggio nell' Emilia. Age of Bronze. Cf. also *Olympia*, No. 492, which differs in having end of ring bound about shaft.

[3] Pins of this type numerous at Tegea. Cf. Milchhöfer, *Athen. Mitth.* V. p. 67. Milchhöfer regards them as "Heftnadeln oder Werkzeuge für Handarbeit." He seems to consider these and the spits (according to him spindles) as essentially the same class of object. — A pin of this type is in the museum at Eleusis and a bundle of them in Nat. Mus., Athens, No. 10081. Example of Forms 1 and 2 are in the museum at Sparta.

[4] The example from Boeotia now in Berlin (Boehlau, *Jahrb.* III. p. 363 g) differs in details from Argos specimens.

[5] Cf. *Athen. Mitth.* V. pl. iv. (lower right-hand corner), from Tegea (Milchhöfer).

circ. 0.205 m. Extension, 0.008 m. Neck, 0.019 m. Ball oblate, with ring at each side. Shaft beneath, rectangle, then two shallow grooves, then rounded. Traces of zigzag on rectangular part of shaft.

730. End gone. Condition poor. Length, 0.108 m. Extension, 0.007 m. Neck, 0.024 m. Ball round, with rings. Details as in No. 729.

731. Length, 0.316 m. Extension, 0.0155 m. Neck, 0.024 m. Ball with ring at either side. Zigzag on rectangular part.

Group iii. Transition at neck, which is generally rectangular in form, but with rounded corners. Extension like Group ii., (*b'*).

732. Length, 0.227 m. Extension, 0.0065 m. Neck, 0.019 m. Traces of zigzag on rectangle. Ball slightly elongated. Material largely copper.

733. Condition poor. Length, 0.237 m. Extension, 0.007 m. Neck, 0.019 m. Possible traces of zigzag on rectangle. Material mainly copper.

734. Point gone. Condition poor. Length, 0.209 m. Extension, 0.008 m. Neck, 0.0235 m. Sides of rectangle have zigzag.

735. Length, 0.0233 m. Extension, 0.0065 m. Neck, 0.0235 m. Neck octagonal. Ball round. Probably traces of zigzag on rectangle.

Group iv. Rectangular neck, usually with corners somewhat rounded.

(*a'*.) Extension has rounded top without cap.

736. Length, 0.131 m. Extension, 0.004 m. Neck, 0.013 m. Ball oblate, with ring at either end.

737. Condition poor. Pin gone. Disk damaged. Length, 0.085 m. Extension, 0.0075 m. Neck, 0.022 m. Ball with ring at either end.

The following, Nos. 738–741, have ornamentation on both neck and rectangle.

738. Length, 0.139 m. Extension, 0.0045 m. Neck, 0.023 m. Two sides of neck have zigzag. Traces of zigzag on rectangle. Good deal of copper in pin.

739. Point injured. Length, 0.228 m. Extension, 0.006 m. Neck, 0.033 m. Zigzag on two sides, and also on three sides of rectangle. Pin mainly of copper.

The two following, Nos. 740, 741, are less certainly to be put here, on account of poor condition of extensions.

740. Poor condition. Length, 0.175 m. Extension, 0.0078 m. Neck, 0.023 m.; has on two sides traces of zigzag. On all sides of rectangle traces of zigzag. Pin mainly of copper.

741. Most of pin and disk gone. Condition poor. Length, 0.092 m. Extension, 0.008 m. Neck, 0.034 m. Has on all sides zigzag, as also rectangle. Pin mainly of copper.

(*b'*.) Extension has cap and usually a base.

(1'.) Single plain cap.

(*a'*.) Neck plain. Rectangular part of body ornamented.

742. End gone. Length, 0.0234 m. Extension, 0.008 m. Neck, 0.0245 m. Traces of zigzag on rectangle. Pin of copper.

743. End and most of disk gone. Condition poor. Length, 0.186 m. Extension, 0.002 m. Neck, 0.0165 m. Traces of zigzag on rectangle.

744. Condition poor. Length, 0.057 m. Extension, 0.008 m. Neck, 0.021 m. Zigzag on rectangle.

745. From south slope. End gone. Length, 0.144 m. Extension, 0.006 m. On rectangle, traces of lines close to edges, with zigzag between. Probably largely of copper.

746. Bent into coil. Extension, 0.008 m. Neck, 0.014 m. Rectangle has two grooves at end and on one side three. Sides have frame of two lines, one close to each edge, with zigzag between.

747. End gone. Length, 0.138 m. Extension, 0.0085 m. Neck, 0.0275 m. Rectangle has two grooves at end and traces on two sides of zigzag.

(*β'*.) Neck and rectangle ornamented.

(*i'*.) Extension without base.

748. End and most of disk gone. Condition poor. Length, 0.125 m. Extension, 0.0055 m. Neck, 0.024 m. Has on two sides traces of zigzag. Rectangle terminates with two grooves; on sides traces of zigzag.

749. End gone. Condition poor. Length, 0.1825 m. Extension, 0.0075 m. Neck, 0.022 m., with traces of zigzag on all sides. Rectangle with grooves at end and traces of zigzag.

(*ii'*.) Extension has no base, but has a double link.

750. End gone. Condition poor. Length, 0.099 m. Extension, 0.009 m. Neck, 0.02 m. Rectangle has probably two grooves at end. Traces of zigzag on two sides of neck and rectangle.

750 a. From south slope. Condition poor. Length, 0.045 m. Extension, 0.0085 m. Neck, 0.019 m. Sides taper slightly toward top. Traces of zigzag on three sides of neck, also on three sides of rectangle.

(*iii'*.) Extension has base, link, and cap.

751. End gone. Condition poor. Length, 0.133 m. Extension, 0.006 m. Neck, 0.0235 m., with sides tapering toward top. Probably double groove at end of rectangle, sides of which taper downward. Traces of zigzag on neck and rectangle. Pin mostly of copper.

752. End gone. Condition poor. Length, 0.187 m. Extension, 0.008 m. Neck, 0.022 m., with sides increasing toward either end, and zigzag on all four. Rectangle has two grooves at end, and zigzag on sides.

753. Most of shaft gone. Condition poor. Length, 0.083 m. Extension, 0.008 m. Neck, 0.032 m., with zigzag on sides and line along edge; and on one side part way down centre. Sides of rectangle taper downward. Traces of zigzag.

754. End gone. Condition poor. Length, 0.169 m. Extension, 0.0075 m. Neck, 0.028 m., with traces of zigzag on three sides. Rectangle has two grooves at end, and lines around edges of sides, inclosing zigzag.

755. From above last part of Ston, under Cyclopean wall, 1893. Point injured. Length, 0.26 m. Extension, 0.01 m. Neck, 0.0265 m., with sides tapering toward top. Probably traces of zigzag on one side. Rectangle has groove at end, and zigzag on all sides. Material mainly copper.

756. End gone. Length, 0.209 m. Extension, 0.008 m. Neck, 0.003 m., tapering slightly upward, with zigzag on sides, and traces of framing line along edges. Rectangle has three grooves at end and zigzags, with framing line as on neck. Material mainly copper.

757. Point dull. Length, 0.2635 m. Extension, 0.0085 m. Neck, 0.0275 m., with zigzag on sides, and traces of framing line. At end of rectangle, two grooves. Sides of rectangle taper downward and have zigzag and traces of framing line. Material largely copper.

758. From West Building. End gone. Length, 0.142 m. Extension, 0.028 m. Neck, 0.017 m., with sides tapering toward top, and traces of zigzag. Rectangle with sides tapering downward, and traces of zigzag.

759. End gone. Length, 0.157 m. Extension, 0.0075 m. Neck, 0.022 m.; tapers slightly upward; traces of zigzag. Rectangle tapers downward; traces of zigzag.

760. Point injured. Length, 0.192 m. Extension, 0.009 m. Neck, 0.0195 m.; tapers slightly toward top. Traces of zigzag. Rectangle tapers downward; has traces of zigzag. Material largely copper.

761. Point injured. Length, 0.212 m. Extension, 0.0065 m. Neck, 0.0315 m., with traces of zigzag. Rectangle tapers downward, with traces of zigzag. Material largely copper.

762. End gone. Condition poor. Length, 0.233 m. Extension, 0.01 m. Neck, 0.031 m., tapering toward centre from both ends, and with traces of zigzag. Rectangle has groove at end, and zigzags.

763. Condition poor. Length, 0.235 m. Extension, 0.008 m. Neck, 0.022 m., tapering from top for short distance. Zigzag on all sides. Rectangle has two grooves at end and zigzag on all sides.

764. From south slope. Most of shaft gone. Condition poor. Length, 0.067 m. Extension, 0.0085 m. Neck, 0.0215 m. Tapers upward. Zigzag on sides, also on sides of rectangle.

765. Length, 0.319 m. Extension, 0.0105 m. Neck, 0.035 m., tapering from ends toward centre, with zigzag on sides. Same ornament on sides of rectangle. Material largely copper.

766. Point injured. Condition poor. Length, 0.262 m. Extension, 0.01 m. Neck, 0.026 m., tapers from ends to centre, with zigzag on sides. Rectangle has two grooves at end and zigzag on sides. Material largely copper.

767. End gone. Length, 0.2 m. Extension, 0.0095 m. Neck, 0.0315 m., tapering from bottom up, and with zigzag on sides. Rectangle has two grooves at end, and zigzag on sides. Material largely copper.

768. End gone. Length, 0.169 m. Extension, 0.0095 m. Neck, 0.033 m., tapers upward from base. Traces of zigzag on two sides. Rectangle has zigzag. Material largely copper.

769. End coiled, but pin complete. Extension, 0.01 m. Neck, 0.0365 m., tapering from ends to centre. Traces of zigzag on sides, also on rectangle. Material as above.

770. Length, 0.342 m. Extension, 0.0175 m. Neck, 0.034 m., with zigzags. Zigzags also on rectangle.

771. Pin mainly gone. Condition poor. Length, 0.098 m. Extension, 0.011 m. Neck, 0.035 m., tapers from ends to centre, with traces of zigzag. Rectangle tapers downward, traces of zigzag.

772. End gone. Condition poor. Length, 0.265 m. Extension, 0.0125 m. Neck, 0.039 m., tapers from top toward centre, with traces of zigzag. Rectangle tapers downward, with traces of zigzag. Material largely copper.

773. End gone. Length, 0.205 m. Extension, 0.01 m. Neck, 0.033 m., tapers from ends toward centre. Rectangle tapers downward. Both neck and rectangle with zigzags. Material largely copper.

774. End coiled, like No. 746. Extension, 0.012 m. Neck, 0.03 m., with zigzags, as also rectangle, which tapers downward. Material largely copper.

The following number has double ring on each side of ball.

775. End gone. Condition poor. Length, 0.302 m. Extension, 0.0065 m. Neck, 0.027 m. The rings farthest from ball, on each side, form ends of neck and rectangle, which tapers downward. Zigzags on neck and rectangle. Two grooves at end of rectangle.

(iv′). Extension has base and cap.

776. Most of shaft gone. Condition poor. Length, 0.054 m. Extension, 0.007 m. Neck, 0.0305 m., tapers from ends to centre. On neck and rectangle, traces of zigzags. Material mostly copper.

777. Most of pin gone. Condition poor. Length, 0.085 m. Extension, 0.0085 m. Neck, 0.033 m., tapers from ends toward centre. Traces of zigzag, as also on rectangle, which tapers downward. Material mostly copper.

Uncleaned addenda to (1′).

778. End gone. Condition poor. Length, 0.12 m. Extension has base, two links, and cap. Length of extension, 0.011 m. Neck, 0.029 m., tapers toward top. Rectangle tapers downward.

779. End gone. Condition poor. Length, 0.137 m. Extension, 0.0182 m., has base, three links, and cap. Neck, 0.025 m. Rectangle tapers downward.

780. Point gone. Condition poor. Length, 0.177 m. Extension, 0.016 m., consists of base, two or three links, and cap. Neck, 0.038 m., with centre smaller than ends.

(2′.) Double cap, also base, link (or links).

Both neck and rectangle ornamented.

781. Point gone. Condition poor. Length, 0.217 m. Extension, 0.008 m. Neck, 0.0235 m. Cap double or grooved. Rectangle has traces of zigzag.

782. Length, 0.133 m. Extension, 0.0075 m. Neck, 0.023 m., tapers from bottom upward. Rectangle tapers downward, with groove at lower end. Neck and rectangle have zigzags. Material largely copper.

783. End gone. Condition poor. Length, 0.159 m. Extension, 0.0095 m. Neck, 0.029 m. Rectangle tapers downward, has two grooves at lower end. Neck and rectangle have zigzag within frame. Material largely copper.

The following three numbers probably belong here, though they could possibly go with following *Class β*.

784. From south slope. Most of shaft gone. Condition poor. Length, 0.052 m. Extension, 0.0075 m. Neck, 0.024 m. Zigzag (traces) on neck and rectangle (broken).

785. Broken at neck. Condition bad. Length, 0.036 m. Extension, 0.008 m. Neck, 0.026 m. Traces of zigzag.

786. From West Building. Broken at lower end of ball. Condition poor. Length, 0.061 m. Extension, 0.013 m. Neck, 0.035 m. Extension has double ring between base and link. Two rings above the ball, of which upper is end of neck. Traces of zigzags.

Uncleaned addendum to (2′). Doubtful.

787. Point gone. Condition poor. Extension, 0.0175 m., consists of base, four small corrugations, and cap. Neck, 0.035 m. Rectangle tapers down.

(3′.) Triple cap.

788. Uncleaned. Broken. Condition bad. Length, 0.09 m. Extension, 0.0088 m. Neck, 0.021 m. Double ring on each side of ball.

Class β. Two balls.

Group i. Neck and section between balls round. Beneath lower ball rectangle.

Extension with base, link, and cap.

789. Point probably not original. Length, 0.289 m. Extension, 0.008 m. Upper neck round, with length, 0.023 m. Lower neck has six unequal sides, 0.011 m. Ring at either side of each ball. Grooved at lower end of rectangle. Traces of engraved lines on sides of rectangle.

Group ii. Both necks rectangular. Beneath lower ball, rectangle.

Extension with base, link, and cap.

790. End gone. Length, 0.22 m. Extension, 0.0075 m. Upper neck, length, 0.0235 m. Tapers for short distance from bottom. Lower neck, 0.0145 m. Ring on each side of balls. Rectangle below lower ball tapers. Traces of zigzag on one side of upper neck, and of frame and zigzag on lower neck. Material chiefly copper.

791. Pin mainly gone. Condition poor. Length, 0.11 m. Extension has link also above ring; length, 0.012 m. Upper neck, length, 0.034 m. Lower neck, 0.012 m. Rectangle tapers downward. No trace of ornament left on necks; trace of zigzag on rectangle.

Addenda to **Type k** (Nos. 792–807).

i. The following cleaned fragments are interesting chiefly because the provenience of many is known.

(a′.) Disk preserved.

792. From south slope. Extension, disk, and neck. Length, 0.04 m. Length of extension, 0.0065 m. No certain traces of ornament.

793. Broken at bottom of ball. Length, 0.045 m. Length of extension, 0.0065 m. Length of neck, 0.023 m. Traces of zigzag on neck.

794. From back of South Building. Broken at neck. Length, 0.024 m. Length of extension, 0.0115 m.

795. From West Building. Broken at neck. Condition poor. Length, 0.026 m. Length of extension, 0.0105 m.

(b′.) One ball with piece at each side. — While a doubt is possible whether these pieces belong here rather than under *spits*, they are, mainly, quite certainly pins, because of the relative smallness of the necks as compared with the rectangle.

796. Fragment of neck, ball, and rectangle. Length, 0.086 m. Elongated ball. Rectangle has groove at lower end, and zigzag on sides. Material largely copper.

797. Fragment as No. 796. Length, 0.074 m. Oblong ball with ring at each side. Rectangle tapers down, and has traces of zigzag on all sides.

798. From south slope. Fragment as No. 796. Length, 0.088 m. Ball elongated. Rectangle tapers down, and has traces of zigzag. Material largely copper.

799. Fragment as No. 796. Length, 0.104 m. Ball has ring at each side. Rectangle tapers for short distance down. Zigzag on rectangle; probably also on neck.

800. From first chamber at east end of terrace below Cyclopean wall, 1893. Fragment as No. 796. Condition bad. Length, 0.043 m. Ball has ring at either side. Rectangle has three grooves at end. No trace of ornament remains.

801. From back of South Building. Fragment as No. 796. Condition poor. Length, 0.061 m. Ring above ball. Probable traces of zigzag on neck.

802. From south slope. Fragment as No. 796. Length, 0.054 m. Ball elongated with ring at either end. Two grooves at lower end of rectangle. Traces of zigzag within frame on neck and rectangle.

803. Fragment as No. 796. Condition poor. Length, circ. 0.185 m. Slightly oblate ball with ring at either side. Rectangle ended by groove and tapers slightly downward. No certain traces of ornamentation on neck. Traces of frame on rectangle. Material largely copper.

ii. The following uncleaned pieces probably belong under Form 2, *Class a*, Group iv.

804. Extension, disk, and piece of neck. Condition poor. Length, 0.035 m. Extension has three grooves near bottom, with coarse screw-threading above. Length of neck, 0.016 m. Owing to small size, probably had one ball.

805. Extension, disk, and piece of neck. Condition poor. Extension has horizontal threading at bottom, and coarse screw-threading above. Length, 0.017 m. Length of neck, 0.016 m. Sides of neck taper for a little way from top, and then enlarge. Owing to small size, probably had one ball.

806. Extension, disk, and part of neck. Condition poor. Length, 0.0435 m. Neck, 0.028 m.; probably had one ball. Extension consists of base, 3½ corrugations (lowest runs only halfway round), and cap. Length, 0.0175 m.

807. End gone. Disk injured. Condition poor. Length, 0.168 m. Extension consists of base, three links, and cap. Between links a single ring (two rings in all). Length, 0.017 m. Length of neck, 0.0285 m. Ball with ring at either side. Rectangle tapers slightly downward.

Discards of **Type k**: cleaned pieces and fragments, fifteen, of which three from south slope; uncleaned pieces and fragments, one hundred and sixty-two.

B. SAFETY-PINS.

DIVISION I. SIMPLE HEAD.[1]

Type a. High bow. Short foot (simple hook).

808. Uncleaned. Foot and end of pin gone. Condition poor. Length, 0.078 m. Height, 0.062 m. Consists of single piece of heavy bronze wire. Pin tapers gradually. Twists in wire accidental. Originally probably end of spit, but use as safety-pin indicated by shape. Somewhat doubtful owing to shortness of pin.

809. Uncleaned. Pin broken. Condition poor. Wire slightly thicker at head and foot than elsewhere. Never had coil. Distance between legs (outside), 0.035 m.

Type b. Medium high bow. Long pin. Somewhat doubtful.

810. End of pin gone. Condition poor. Most of hook gone. Length, 0.057 m. Height, 0.0189 m. Pin projects beyond foot. Of single piece of wire. Probable use as fibula shown by shape of bow.

DIVISION II. SPIRAL HEAD.

Type c. Flat bow. Plain.[2]

811. Uncleaned. Fragment of bow and coil. Condition poor. Length, 0.0833 m. Wire in head much smaller than in bow.

Somewhat doubtful whether the following number belongs here.

812. Uncleaned. End of bow and part of coil gone. Length, 0.0605 m. Bow rectangular near coil. Wire of coil smaller than bar.

Type d. Flat bow of sheet bronze to which some object was formerly attached.[3]

FORM 1. WITH HOOK AT FOOT.

813. Complete except for the loss of ornament. Length, 0.052 m. Height, 0.0101 m. Near end of flat piece, two rivets, projecting above slightly, but flattened to under surface. Material largely copper.[4]

FORM 2. WITH DISK AT FOOT.

814. Coil broken. Disk injured. Length, 0.0695. Rivets as in No. **813**. Disk seems to have been leaf-shaped and convex.

Type e. Flat bow, consisting of broad band.

815. Coil gone. Condition poor. Length, 0.071 m. Material largely copper.

816. Band, with foot and coil mainly gone. Length, 0.025 m. Probably a simpler form of pins of following type.[5]

Type f. Flat bow, which consists of two connected spirals.

817. Condition bad. From south slope, below Second Temple, 1893. Broken. Pin gone. Length, 0.075 m.

PLATE LXXXV.

818. From cutting above Upper Temple, toward tents, 1893. Part of pin now gone. Length, 0.1245 m. Entire pin made of single piece of wire, which is diamond-shaped except hook and bar. These latter are round. Material largely copper.[6]

PLATE LXXXIV.

819. Only coil of foot preserved. Length, 0.0235 m.

820. From West Building. Foot only preserved. Wire is diamond-shaped. Length, 0.029 m.

821. From West Building. Only a fragment preserved. Wire diamond-shaped.

822. From northwest corner of Old Temple, 1893. Only a fragment preserved.

It is uncertain whether the following numbers belong here.

823. From West Building. Condition poor. Wire diamond-shaped.[7]

[1] An analogy to this form of head may be seen in certain bronze fibulae from Bologna (Benacci II.) of horned snake type, in which head is represented only by a swelling or knob. These, however, stand at the end of a development, not at the beginning. Montelius, *Civ. Prim. It.* pl. 79, figs. 13, 15, 16. Similar with disk instead of ring, *ibid.* pl. 83, figs. 20, 21 (Arnoaldi). A closer parallel is offered by a pin of fibula bent to form safety-pin from Sikel village near Matera in Apulia, published by Patroni, *Mon. Ant. Linc.* VIII. col. 497, 507, fig. 107. Other fibulae without coil, partly of secondary use, *Brit. Mus. Cat. of Bronzes*, Nos. 1944 f., 1935.

[2] Cf. fibulae from Mycenae, chamber tombs, Ἐφημ. Ἀρχ. 1888, col. 167, pl. 9, Nos. 1, 2 (Tsountas).

[3] With **Type d**, cf. Montelius, *Civ. Prim. It.* pl. 8, Nos. 5–7, from late dwelling of Peschiera. These, however, have no attached ornament, and are otherwise somewhat different. Flat bow, *Olympia*, pl. XXI. No. 343.

[4] Very like fibula from Lusi, *Jahresh.* IV. p. 52, No. 76 (Reichel and Wilhelm). Cf. fibula from Suessula, *ibid.* VI. p. 113, fig. 58 (Hadaczek).

[5] Perhaps Nos. **815** and **816** are to be regarded as ornamental strips of sheet bronze, e. g. diadems. Cf. *Olympia*, Nos. 313 and 315 ff.

[6] Cf. Montelius, *Civ. Prim. It.* pl. 21, No. 283, from southern Italy. Exactly similar in shape, but to judge from drawing, made of rounded wire. Cf. also *Olympia*, No. 359, and Boehlau, *Jahrb.* III. p. 363 b, from Boeotia. Double-coiled spiral fibula, Nat. Mus., Athens, No. 8196.

[7] Cf. coils from Sikel village in Apulia. *Mon. Ant. Linc.* VIII. col. 471 (Patroni).

PLATE LXXXV.

824. Broken at both ends. Length, 0.125 m. Wire diamond-shaped. Color medium.

825. Fragment. Not certain that it is piece of a fibula. Condition poor. Small coil of wire, oval in section.

Type g. Plain rounded high bow. Foot a narrow hook.

FORM 1. TRANSITIONAL MODIFICATION OF STRAIGHT BOW.

826. From south slope. Foot and point gone. Length, 0.046 m. Entire pin of one bit of round wire of nearly uniform size.

FORM 2. HIGH BOW.

827. End of pin gone. Length, 0.079 m. Height, 0.0535 m. Of one bit of metal. Bow oval and uniform in size.

FORM 3. LOW BOW.

Class a. Bow of uniform size.

828. Fragment. Condition poor. Length, 0.0615 m. Height, 0.0365 m. Of one bit of metal. Bow of wire slightly oval in section. Foot forms triangular blade.

829. From West Building. Fragment. Length, 0.375 m. Height, 0.0215 m. One bit of metal. Wire of uniform size.

830. Still flexible. Length, 0.038 m. Height, 0.017 m. Bow uniform in size and of wire slightly oval in section. Wire of pin larger than in spiral. Hook low and open.[1]

Class β. Slight swelling in arch of bow.

831. Fragment. Length, 0.054 m. Has hook on left[2] side. Swelling in bow to left of centre. Color dark.[3]

Type h. High bow. Long foot coming to a point.

FORM 1. ROUNDED WIRE.

Class a. Uniformly thick wire.

The following is of transitional type, the foot being as yet only partially developed.

832. Uncleaned. Most of foot and pin gone. Condition poor. Length, 0.0625 m. Height, 0.025 m. Form of foot uncertain.

Class β. Bow thickens toward centre.

833. Foot gone. Length, 0.081 m. Height, 0.0315 m. Single piece of metal. Hook on left side. Bar oval in section, the broad surfaces being on sides near foot, but on top and bottom near head.[4]

FORM 2. RECTANGULAR WIRE.

834. Found west of Second Temple. Length, 0.0665 m. Height, 0.0215 m. Foot a long thin blade with left side bent up to form hook. Color medium dark.[5]

835. Uncleaned. Fragment. Condition poor. Length, 0.0865 m. Hook on left side.

Type i. High bow. Rectangular blade at foot forming one piece with bar. Bar rounded.

FORM 1. BAR OF UNIFORM SIZE.

836. Head and pin gone. Length, 0.066 m. Height, 0.039 m. Bar oval, with broad surface at side. Hook on right side.

FORM 2. BAR THICKER AT MIDDLE. BOW SOMEWHAT LOWERED.

837. Fragment. Condition poor. Length, 0.07. Bar as that of No. **836**.

Addenda. It is uncertain to which of the **Types g, h, i,** the following belong.

838. Fragment. From south slope. Shape of bow indicates it is a fibula. Length, 0.054 m.

839. Fragment. Length, 0.0475 m. Wire slightly oval.

840. Fragment of coil and bow. Length, 0.031 m.

841. Fragment shown by shape to be fibula. Length, 0.0665 m.

842. Fragment. Length, 0.061 m. Oval wire.

843. Fragment. Length, 0.06 m. Centre of bow broad and thick. Three grooves on either side of centre.

Type j. High bow. Rope wire.[6]

844. Head and pin gone. Length, 0.07 m. Height, 0.05 m. Grooves in wire broad and shallow.[7]

845. Most of pin and foot gone. Length, 0.047 m. Bow has four screw-threadings. Wire flattens where it passes into coil. Head on right side. Bow of uniform size.

846. Uncleaned. Pin and foot gone. Length,

[1] Cf. fibula from Lusi, published by Reichel and Wilhelm, *Jahresh.* IV. p. 52, No. 75.

[2] Left as one holds fibula with head toward one.

[3] Cf. Montelius, *Civ. Prim. It.* pl. 5, No. 41, from Chiusi, and pl. 50, No. 2, from Este (period I.). The latter has ring passing through head.

[4] Cf. Montelius, *Civ. Prim. It.* pl. 8, No. 85 (Villanova).

[5] Cf. Montelius, *Civ. Prim. It.* pl. 8, No. 84 (Villanova).

[6] Cf. the very similar Italian type, Montelius, *Civ. Prim. It.* pl. 5, No. 40 (Bismantova).

[7] Cf. twisted bronze wire used in straight fibula from Mycenae (outside shaft-graves), No. 2563. Ἐφημ. Ἀρχ. 1888, pl. 9, No. 1 (Tsountas). Similar pins from Lusi, *Jahresh.* IV. p. 52, Nos. 78, 79 (Reichel and Wilhelm), and from Kavousi, from tomb of first part of the iron age, *Am. Jour. of Arch.* Second Series, V. p. 136 (Harriet A. Boyd).

0.071 m. Height, 0.0275 m. Bow of uniform size, with four threadings. Head on right side.

Type k. High bow with one or more loops.

Form 1. One loop.

Class α. Plain round bar.[1]

847. Uncleaned. Pin complete. Length, 0.058 m. Height, 0.032 m. Of single piece of round wire, which flattens at foot and tapers at point. Hook low.

Class β. Bar partially rectangular.

Group i. Rectangular swelling near foot, or head, or both.

848. Uncleaned. Head and foot gone. Condition poor. Length, 0.0585 m. Height, 0.0325 m. Loop in bar near head; between loop and foot, bar swells.

849. Uncleaned. Head gone, foot injured. Condition poor. Length, 0.0595 m. Height, 0.043 m. Bar round, with loop slightly forward of centre, swelling near head. Another swelling between loop and hook.

Group ii. Bow in part rectangular and in part round, with screw-threadings.

850. Uncleaned. Fragment. Condition poor. Length, 0.0475 m. Height, 0.031 m. Bar with four threads. On shorter side of loop, bar rectangular. Not certain this is fibula, but probable from shape.

Group iii. Wire rectangular in loop; elsewhere round. Only example uncertain.

Plate LXXXVI.

851. Uncleaned. Fragment. Condition poor. Length, 0.031 m. Height, 0.061 m. Nearly uniform rounded wire, becoming rectangular at 0.017 m. from top. Head large and rudely coiled; owing to bend of wire at rectangular part, uncertain that pin belongs in this type. Possibly it compares with the others as the head in Division I. with that of the other Divisions.

Form 2. Double loop.

852. Uncleaned. Fragment. Condition poor. Length, 0.0665 m. Rounded wire with slight swelling just back of loops, perhaps due to oxidation. Upper loop largest.

Type l. More advanced. Sharp inward bend from angle of bow. Bar has three reinforcements on each side, opposite each other, one pair at each of the outer curves and one at the inner angle.

853. Foot, pin, and part of head gone. Length, 0.06 m. Bar consists of two arches, the angle of connection being nearly right angle. Originally probably two full rings in coil. Coil and bar probably one piece. After forward reinforcement, the broader side of bow becomes the narrower, and *vice versa*, indicating commencement of foot.

Type m. Similar, but one of reinforcements has form of dumb-bell.

854. Fragment. Length, 0.0435 m. Two arches connected by heavy inverted arch. At top of left arch dumb-bell. Bar between here and coil, oval in section. The right or foot end seems to have a groove on top. Resembles serpent's head, but probably accidental.[2]

Type n. Single arch, having form of inverted boat. Geometric ornamentation.

Form 1. Solid.

855. From back of South Building. Head, pin, and part of foot gone. Length, 0.0245 m. The metal oval-shaped, broad side being up. Sides have cleft between, which leads one to suspect that pin may not be solid. Top of pin engraved with fine and rather faint diagonal lines arranged in three fields, centre and ends.

Form 2. Hollow.

856. Head and foot gone. Length, 0.025 m. Opening in under side roughly triangular. Top engraved with diagonal lines running from centre rib, starting on each side of middle of bow, which is left plain.[3]

857. Head and foot gone. Condition poor. Length, 0.0335 m. Commencement of tail leading to coil is preserved. Engraved with lines running from central rib to sides.

Type o. Sail or saucer pattern.[4]

858. From east of Temple, 1894. Fragment. Length, 0.077 m. Bow of three nearly round, shallow connected saucers, having their longer axis in line with axis of bow. Very slightly raised narrow band runs along the longer axis. Commencement of blade of foot.

[1] With this form in general, cf. the essentially different Italian style. Montelius, *Civ. Prim. It.* pl. 16, No. 219; also *ibid.* pl. 72, No. 17, from Bologna (S. Francesco). The example *Olympia*, No. 353, is more like the Italian.

[2] Cf. Montelius, *ibid.* pl. 17, No. 242 (S. Francesco, Bologna). Curve of pin probably different. Somewhat similar, *Olympia*, No. 356, with two pairs of horns.

[3] Cf. *Olympia*, pl. xxi. No. 350.

[4] Large engraved example of this type, *Olympia*, No. 364. Another in Berlin from Boeotia, *Jahrb.* III. p. 362 (Boehlau), with engraved plate. Another, *ibid.* p. 363 (e), without pinching of bow, i. e. *navicella*.

The following numbers are fragments of pins of this type, and of types more or less similar as regards the general shape of the bow.

859. Uncleaned. Fragment. Length, 0.0365 m. Bar flat and diamond-shaped. Tapers downward. Part of coil preserved.

860. Uncleaned. Fragment. Length, 0.047 m. Bar diamond-shaped in section. At upper end, knob attached to stem by short thick neck.

861. Part of upright, with short piece of bow. Length, 0.052 m. Five low raised rings at bend.

862. Upright, commencement of coil, and beginning of bow. Length, 0.0655 m. Upper side has fine engraving.

863. Fragment. Length, 0.0815 m. Diamond-shaped in section, tapering downward.

864. Fragment. Upright, with beginning of head and bow. Length, 0.094 m. Diamond-shaped in section, and tapers downward. Outer side of upright engraved in geometric style, with zigzags and diamond-patterns in fields. Neck between upright and bow. Commencement of bow engraved with straight and zigzag lines running lengthwise.

865. From West Building. Fragment, as No. **864**. Length, 0.122 m. Diamond-shaped upright, tapering downward. Between upright and bow, neck, similar to but smaller than that of No. **864**. Bow engraved similarly to that of No. **864**, as is also outer side of upright.

866. Fragment. Piece of upright and bow (probably). Length, 0.043 m. Upright round. Upper portion of bar rectangular. Bow flat and flaring.

867. Fragment. Part of bow and foot. Length, 0.055 m. Bow engraved on upper side. Neck similar to that of Nos. **864** and **865**. Blade engraved on both sides with geometric patterns, inclosed in fields.

868. End of bow and most of foot preserved. Length, 0.069 m. Middle portion of upper side of bow ornamented with straight lines. Edge seems to have had similar engraving. Neck with usual form. Blade of foot attached nearly at right angles. Both sides engraved with geometric designs inclosing a principal field, in which, on one side, head and neck of horse, on the other, probable traces of head.[1]

Type p. Ball and hook. Hook flat.

Form 1. One ball.[2]

Class α. Upright round throughout.

869. Pin and hook gone. Length, 0.052 m. Height, 0.033 m. Ball slightly oblong. Upright joined to ball by ring and groove. Upright has four grooves in middle and others next head. Wire flat in coil. Possible that this pin belongs under the following **Type q**.

870. This probably belongs here, though not certain, as end of upright is gone. Length, 0.042 m. No neck between ball and upright, which has fine grooving. Foot attached to ball directly, and at end has three grooves.

Class β. Upper part of upright round, lower part rectangular or diamond-shaped.

Group i. Round part plain, faintly grooved or jointed.

871. Pin, part of foot and coil gone. Condition poor. Length, 0.055 m. Small ring on either side of ball. Coil and upright of one piece. A rivet-headed iron nail passes through coil, but is broken on each side.

872. Fragment. End of foot and of upright gone. Length, 0.0715 m. Upright tapers downward, and has four slight grooves 0.003 m. from ball. On shoulder four more, and four more at end of foot.

873. Fragment. Pin, coil, and part of foot gone. Length, 0.086 m. Height, 0.051 m. On right side of ball a round opening, with central part sunk much more deeply than outer part; also edge of central hole narrower than diameter of hole itself. Depth of hole, 0.0075 m. Probably served for insertion of ornament. Upright plain, except for raised narrow ring near shoulder. Similar ring on other side of ball.[3]

Group ii. Round part of bow corrugated.

874. Fragment. Pin, coil, and most of foot gone. Length, 0.0365 m. Oblong rounded swelling, with sides meeting in obtuse angle. On bow, at each side of swelling, eight small corrugations.

875. From back of South Building. Fragment as No. **874**. Length, 0.0685 m. On head side of bow twelve corrugations, that nearest ball being high and narrow and serving as collar; the rest diminish irregularly downward. Small col-

[1] Cf. *Olympia*, Nos. 362, 362 a, with engraved geometric designs. *Jahrb.* III. p. 250 (Furtwängler), and pp. 361 ff. (Boehlau), Ἐφημ. Ἀρχ. 1892, pl. xi. No. 1 a (Wolters).

[2] Cf. fibulae from Thera, *Ath. Mitth.* XXVIII. p. 232 (Pfuhl).

[3] Very similar to *Olympia*, No. 368, which has ball with disk at either side.

lar at beginning of rectangle, while at lower end the rectangular portion curves and flattens to form coil. On foot side of bow, four corrugations, of which outer two are thinner and serve as collar next to ball and flat part of foot.

Addendum to FORM 1. It is not certain to which class of the above the following belongs, owing to its poor condition.

876. From south slope. Fragment. Ball, short piece of foot, and bar on head side preserved. Length, 0.026 m.

FORM 2. THREE BALLS.

877. From West Building. Fragment of bow. Condition poor. Length, 0.0565 m. Oblate ball with much smaller ball on either side. Two small rings between balls. On head side of bar four rings, above which the upright has diamond-shaped section, and tapers down. The upper (outer) surface is worked flat. Near coil is a rivet. Probably coil was separate piece. Foot is connected with balls by neck and rings. — It is quite possible that this pin belongs under the following **Type q**.[1]

878. Fragment of bow. Condition poor. Length, 0.046 m. Balls oblate, with ring between them. Upright has small ring next to ball and eight corrugations beyond, — whether there were more originally is uncertain. Corrugations taper down in diameter, but thickness remains constant except of lowest, which is thinner. Flat part of foot begins at ball. — Possible that this pin belongs under the following **Type q**.

Type q. Ball and blade, which is a development of the flat hook of the preceding Type.

879. From cutting above Upper Temple toward tents, 1893. Nearly perfect, though corroded. Length, 0.087 m. Height, 0.052 m. Hook on left side. Ball oblate. Upper side of bar above ball has five ridges and is of oval form. Coil of two twists, and on bar, at beginning of coil, five faint grooves. Between ball and blade, eight ridges on upper side of bar. Hook formed by roll of lower edge of blade. Height of blade on inner edge, 0.043 m., outer edge, 0.0495 m. Width, 0.04 m.[2]

Type r. Three-sided solid body with hook. Hook flat.

880. From southwest of Second Temple near wall. Coil, pin, and foot gone. Length, 0.052 m. Body solid, with upper sides convex and lower side concave. From middle of top projects small broken knob. Raised ring at each end of body, that on head side having oblique threading. Body projects beyond head-ring and has end worked down to form beginning of coil. Foot consists of round block and thin, flat commencement of hook. — Fact that coil seems to begin so close to body renders it unlikely that the hook had developed into the large blade of the following type.

Type s. Three-sided solid body with blade. PLATE LXXXVII.

881. Coil, pin, and hook gone. Body probably solid, with lines of top and bottom nearly straight. From centre body tapers toward either end. Upper surface of sides concave, lower surface slightly convex. On plain oval standard on centre of top stands a conventionalized bird.[3] The upright, rectangular in section, with outer sides concave and inner sides convex. Three grooves on outer sides at top. Below, three similar grooves, below which the metal is worked thin, and in the thin part small hole with trace of a second. Uncertain how long this thin part was, but to it the head and pin were riveted. The rectangular blade joins body directly, the join being marked by a ring: height, 0.048 m., width, 0.028 m. At outer top corner, an elliptical standard of two rings and a bead on which stands a bird.

Type t. High bow, corrugated, tapering toward head and feet.

882. Head, pin, and most of foot gone. Length, 0.057 m. Height, 0.039 m. Corrugations about same size except at centre, which has one wider with two narrower on each side. In head end of bow, hole for insertion of wire coil.[4]

Type u. High bow ornamented with corrugation bands and rings. Inserted heads.

FORM 1. ROUND CORRUGATIONS AND RINGS UNDECORATED.

Class a. Corrugations and rings in three groups, one at centre and one at either end of bow.

Group i. Wide top of foot. At head and centre, groups of two corrugations and three rings, at foot three corrugations with ring above.

883. From east of Temple, 1894. Length, 0.07 m. Height, 0.049 m. Wire of head flattened slightly in coil. Groove along each shoulder of bow, and two lower rings at head grooved. In back of hook, two vertical grooves. Right side of pin less carefully finished than left.

Group ii. Masses at centre and head have two corrugations with ring at either side; at foot, one corrugation with ring at each side. Foot broad.

884. Head and pin gone. Length, 0.0575 m. Height, 0.032 m. All corrugations have oblique threading, and all rings grooved. Traces of iron rust in hole in head. Lower edge of foot uninjured in central part. Outer edges broken about rivet-holes, between which is a rivet, probably for the attachment of hook.

Group iii. Bands with rings at either side. Foot about same width as bar.

885. Half of pin gone. Length, 0.043 m. Height, 0.037 m. The raised bands divided into broader central one, with two outer narrower ones; at foot, three outer ones below. Back of foot ornamented with line on each side converging toward bottom. Hook on right. For band between grooves, cf. No. **569**.

Group iv. Each ornament consists of raised corrugation-band with grooved ring at either side. Top of foot wide.

886. Head and pin gone. Length, 0.034 m. Height, 0.0265 m. Projecting top of foot turns down at ends. Grooves in rings of head and foot heavier than in centre. Two vertical grooves on back of foot. Ornament at centre of bow and at head not carefully finished; on left side some of engraved lines not carried through.

887. From below Upper Temple, east of Chambers, 1894. Pin gone. Rings at sides of centre corrugation have three grooves; those at foot and head only two. The left side of all not carefully finished. Foot has wide top, and two vertical lines on back near edge. Hook was on left. (For band and rings cf. Nos. **569** and **666**.)

888. Length, 0.0511 m. Height, 0.0415 m. Completely preserved but corroded. Central band at top has fine cross-grooving, and rings at side two grooves each. Similar at head and foot. Pin inserted into hole in head, but hole is too big, so pin is wedged in; or else end of pin is bent back so as to form wedge. Coil has two twists. Hook, which is on right, has extension at top and two vertical grooves at back. Pin seems less carefully finished on right.

Group v. Ornaments consist of central band, with heavy ring at either side. Rings higher than band. Bow between ornaments has fine threading.

889. Fragment. Length, 0.028 m. Threading seems to be confined to left side, which indicates that hook was on right.

Class β. Main ornaments as in Class a, but with one or more rings or subsidiary corrugations, or both, between central and end ornaments.

Group i. Secondary ornaments consist of single ring at each side of central ornament, which consists of two or more ring-corrugations side by side with ring outside of each. End ornaments have also ring between the corrugations.

890. From south slope, 1894. Length, 0.043 m. Height, 0.0355 m. Ornamentation less careful on right side, where is also hook, which has usual grooving.

Group ii. Secondary ornament like that of Group i., but main ornament like that of *Class a*, Group iv.

891. Most of foot and end of pin gone. Length, 0.036 m. Height, 0.0285 m. Central ornament consists of broad ring-corrugation, with double grooved ring at each side. Ornaments at head and foot similar. Right side less carefully finished than left. Foot had extension at top, and two grooves at back.

Group iii. Principal ornament similar to that in Group ii. Secondary ornament consists of two rings side by side, on either shoulder of bow.

892. Coil and pin gone. Corroded. Length, 0.046 m. Height, 0.0305 m. Hook on right side, which was not carefully finished. Foot probably had extension, but at present it projects only very slightly. Back of foot has usual grooves.

Group iv. Secondary ornament consists of narrow rounded corrugation with rings attached at either side. Main ornaments consist of bunches of rings (single or grooved).

893. Coil, pin, and part of foot gone. Length, 0.0435 m. Height, 0.0325 m. Central ornament is of single ring, with grooved ring on each side. (Cf. No. **657**.) Ornament at head is of three grooved rings; at foot similar, but lower ring single. Unfinished on left side. Head and

[1] Simpler but similar is *Olympia*, No. 367.

[2] Other fibulae of this shape from temple of Athena Cranaea near Elateia. *B. C. H.* XII. pp. 57 ff. (P. Paris).

[3] Cf. *Brit. Mus. Cat. of Bronzes*, No. 150.

[4] Differs somewhat from fibulae of *sanguisuga* type, e. g. Montelius, *Civ. Prim. It.* pl. 75, Nos. 1, 2. (Bologna, Benacci I.) Cf. Mycenae, outside tombs, No. 1349, with ribbed high bow.

foot somewhat flat. Pin was iron. Foot has extension, and had grooves on back.[1]

Group v. Between central ornament and bottom ornaments on each side, a group of three rings, between which and principal ornament at either side is a single ring. Principal ornaments of type of *Class α*, Group iv.

894. Coil and pin gone. Length, 0.048 m. Height, 0.0355 m. Central ornament of corrugation with grooved ring on each side. At head and foot, similar ornament. Secondary ornament similar, but rings not grooved. Left side not carefully finished. Pin was probably iron. Foot has wide, thin extension, and grooves at back.

FORM 2. IN MIDST OF CORRUGATIONS AT HEAD AND FOOT IS LARGE RECTANGULAR BLOCK, TENDING TO GIVE LOWER END FLAT APPEARANCE. CORRUGATIONS AND RINGS AT HEAD AND FOOT SOMEWHAT FLATTENED.

Class α. Centre of bow plain.[2]

895. Coil, pin, and most of foot gone. Length, 0.0605 m. Height, 0.05 m. Rings at head and foot grooved. Trace of bronze pin in head. Two small holes on right side of block at head, of uncertain purpose. Foot has slight extension and usual grooves. Hook was on right.

Class β. Centre of bow ornamented.

896. Coil and pin gone. Length, 0.062 m. Height, 0.055 m. At centre, two corrugations between three rings. At head, rectangular block, above which two rings, corrugation and ring of decreasing diameter; below block, two rings, corrugation and rounded surface with engraved radial lines. On right side, hole connecting with the hole for insertion of pin. Cf. No. **895**. Similar ornament at foot, which is of usual shape. Hook on right, and this side less carefully finished than left.[3]

FORM 3. ORNAMENTS OF BOW HAVE FORM OF SOLID BLOCKS SLIGHTLY GROOVED TO REPRESENT CORRUGATIONS AND RINGS.

Class α. Blocks round.

897. Coil, pin, and part of foot gone. From West Building. Length, 0.07 m. Height, 0.0375 m. Blocks at centre and ends all engraved with central band, with ring at each side and at ends. Space between the rings filled by four dotted rings. In bottom of head, remains of bronze pin. The extension piece seems to be inserted in bottom of foot.

898. Fragment of foot ornamented with two rings at edges and five dotted bands between. All grooves shallow.

Class β. Blocks rectangular and flat.

899. Coil and pin gone. Length, 0.055 m. Height, 0.038 m. Hook on right. The blocks have on left side three dotted bands, separated by two broad bands, and at outer edges two narrow bands, which alone are carried round other side of block. At foot, which is wider below than above, the lower outer ring coincides with extension piece. Stub of wire of pin visible at head.

Class γ. Blocks of similar shape to those of Class β, but bow, which sags at centre, perhaps had more than three.

900. Fragment of foot and bow. Length, 0.0335 m. Height, 0.043 m. Hook on left. Bow bends down at centre, and it seems as though there had been a second block there. Left side and both narrow sides of blocks have fine irregular criss-cross. Right side of top block has three perpendicular and two horizontal lines; on lower block, five horizontal lines. No extension on foot, which is wider below than above.

Type v. High flat bow. Inserted pin (uncertain whether always so or not).[4]

901. Head injured, pin gone. From first chamber at east end below Cyclopean wall, 1893. Length, 0.065 m. Height, 0.058 m. Hook on right. Edges of bow rounded. At foot and head bow is wider and thicker, thus imitating the ornaments of preceding types. These wider parts are divided into two parts by a ring, represented on the left by deep notches at the ends and by grooves along the left side, while on the right the upper and lower parts each have groove down centre. Each of these grooves has three holes; in one (upper inside of head end) remains of bronze rivet. At head is projection. At foot, narrow extension on inside. Two grooves on back of hook, and hole near top.

The following objects are somewhat uncertain, but probably are a simpler form of same type.

[1] Cf. the somewhat similar pin, *Olympia*, No. 371.

[2] Cf. G. and A. Körte, from Gordion, *Jahrb. Ergänzungsh.* V. p. 78, figs. 66, 67.

[3] Form of bow somewhat similar to that of *Olympia*, No. 370, which appears, however, to have had a double spiral. See Furtwängler, *s. n.*

[4] Several fibulae of this type from necropolis of Gordion (tumuli III., IV.). G. and A. Körte, *Jahrb. Ergänzungsh.* V. pp. 78, 102.

902. Fragment of bow. Length, 0.047 m. Thin bronze plates attached by rivets to one side of foot. Bow perforated with holes about 0.01 m. apart; mostly filled up. On lower part of foot, extension with hole at either end. Perhaps this and No. **901** had bar attached at base and head by rivets, and running across. Cf. No. **905**.

903. Fragment of bow. Length, 0.05 m. No holes. Perhaps not fibula, but ring.

904. Fragment of bow. Length, 0.0385 m. Three holes; in one at end, rivet. Trace of fourth hole in right end.

DIVISION III. PIVOT HEAD.

Type w. High bow with three corrugation ornaments. Pin plays on rivet, passing through head from side to side. Across bottom, transverse bar.

905. From West Building. Length, 0.043 m. Height, 0.039 m. Hook on right. At top, head, and foot, corrugation, with ring each side; rings at head and foot grooved. (For lower ornaments cf. No. **658**.) Cross-bar looks as if of same piece with head and foot. Pin was attached to right side.[1]

Type x. Rather low bow with three or four corrugations, each with ring at either side.

FORM 1. PIN INSERTED INTO SLIT IN HEAD AND FASTENED BY RIVET.

Class α. Three corrugations.

Group i. Central corrugation has raised grooved band. Other corrugations have raised band.

PLATE LXXXVIII.

906. Pin and hook gone. Length, 0.043 m. Height, 0.024 m. (For combination of corrugations cf. Nos. **634** and **682**. The corrugations are also themselves of similar form.)

Group ii. All three corrugations have grooved bands.

907. From back of South Building. Pin and hook gone. Length, 0.0325 m. Height, 0.0205 m. Hook probably on left at head, socket for pin is an eyelet attached to end of bow. Hole filled with iron, consisting of rivet and probably small piece of pin.

908. Pin gone, head injured. Length, 0.0455 m. Height, 0.0265 m. Hook on right. At foot is added shaft (of same piece with bow), consisting of heavy and light ring, into which is inserted the hook. On front of hook, three slight, straight, perpendicular grooves. On both sides of grooved band on corrugations, row of dotted circles. For corrugations cf. Nos. **635** ff. For somewhat similar ornamentation of corrugation, No. **695**.

In the following number rings and raised bands have fine oblique notching.

909. Pin and part of head and foot gone. Poor condition. Length, 0.0365 m. Height, 0.0225 m. Bronze rivet remains. At foot, a broad and narrow ring, the latter grooved.

Class β. Four corrugations, all of which have raised grooved bands.

910. Length, 0.063 m. Height, 0.035 m. Hook on right. Between middle corrugations low raised convex band, with ring at either side. Band has cross-grooves in groups of two. Foot flat and long, perhaps inserted, but probably not. Rivet bronze.

FORM 2. PIN ATTACHED TO SHORT ROUND SHAFT, PROJECTING DOWN FROM HEAD END OF BOW. MOTION OF PIN IS THUS LATERAL.

Class α. Three corrugations.

Group i. Central corrugation has raised grooved band. Side corrugations have raised band.

911. Pin and hook gone. Condition poor. Length, 0.034 m. Height, 0.017 m. At head, second narrow ring, slightly smaller in diameter, beneath lower side ring; and beneath this, round shaft, to which is attached small piece of iron pin.

The following two numbers have oblique notching on some or all rings.

912. Pin and hook gone. Condition poor. Length, 0.037 m. Height, 0.024 m. Hook was on right. Head same as that of No. **911**. Pin was of iron.[2]

913. Pin and most of foot gone. Length, 0.036 m.

Group ii. All corrugations with raised grooved bands.

914. Pin and most of foot gone. Condition

[1] Similar cross-bar, *Olympia*, No. 376. In No. 377 bar is connected with centre of bow by perpendicular bar. Front of Olympia specimens ornamented with knobs. For a closer parallel cf. fibula from Ind, *Athen. Mitth.* XII. p. 11 (Studniczka).

[2] *Olympia*, No. 372, has bow of same shape and ornament, and appears to agree with this form in manner of attachment of pin. Regarding this method of attachment, Furtwängler makes no statement.

poor. Length, 0.037 m. Height, 0.021 m. Traces of notching on upper band of foot corrugation. Remains of iron pin. Foot was inserted.

915. From back of South Building. Pin and part of foot gone. Length, 0.041 m. Height, 0.0235 m. Remains of oblique notching on all rings and bands. Knob for pin attached directly beneath lower side ring.

Class β. Four corrugations.

916. Pin and part of foot gone. Condition poor. Length, 0.042 m. Traces of notching on lower ring of foot corrugation. Possible traces on bands of all corrugations. At foot, rectangular hook-shaft inserted directly into bottom of ornament.

917. Fragment. Condition poor. Length, 0.045 m. Traces of oblique notching on lower side ring and band of head corrugation. Beneath lower ring of head corrugation, round extension followed by knob for pin.

918. Pin gone. Length, 0.048 m. Height, 0.025 m. Hook on right. Traces of oblique notching on all bands and rings. Hook-shaft inserted directly into lower ring of corrugation.

Type y. Ring safety-pins. Head and foot inserted. Attachment of pin, so far as preserved, as in FORM 2 of **Type x**.

FORM 1. ROUNDED BAR.

Class α. Bar slightly elliptical in section.

919. Pin, foot, and head gone. Length (i. e. outside diameter of ring in axis of pin), 0.0245 m. Height, 0.023 m.

920. Pin gone. Length, 0.026 m. Height, 0.0255 m. Hook probably on left side. Rivets[1] of head and foot show on upper side.

921. Pin and foot gone. Length, 0.0285 m. Height, 0.028 m.

922. From West Building. Pin and hook gone. Length, 0.032 m. Height, 0.031 m. Head and foot rivets inserted, but do not show on top. Above hook, rectangular shaft. Hook was on left.

923. Fragment. Length, 0.024 m. Hook probably on left.

924. From south slope. Pin and head and foot gone. Length, 0.034 m. Height, same. In one rivet-hole, remains of iron shaft.

925. From beneath Cyclopean wall above Stoa, 1893. Pin and most of head gone. Length, 0.035 m. Height, same. Pin was of bronze.

926. From back of South Building. Pin gone. Length, 0.0385 m. Height, same. Rivets show on top. Head formed of rectangle with knob. Upper part of foot rectangular, hollowed to form hook. On outside of hook, three grooves. Hook on left.

927. Pin and part of head and foot gone. Length, 0.042 m. Height, same. Rivets show on top.

928. From West Building. Pin and head gone. Length, 0.046 m. Height, 0.045 m. Foot rivet shows on top. Hole for head rivet pierced through. Under side of foot rectangular. Hook on left.

Class β. Elliptical bar. (Forms transition to following forms.)

929. Pin and part of head and foot gone. Length, 0.029 m. Height, 0.0285 m. Head and foot rivets show on top.

930. Pin, head, and foot gone. Length and height, 0.035 m. Bit of iron in one rivet-hole.

FORM 2. UPPER SIDE OF BAR ROUNDED, LOWER SIDE FLAT.

931. Pin, head, and foot gone. Length, 0.0315 m. Height, 0.031 m. Bits of iron in rivet-holes.

932. Photograph shows under side. Pin, head, and foot gone. Length, 0.034 m. Height, 0.0335 m.

FORM 3. UPPER AND LOWER SIDES OF BAR FLAT. OTHER TWO SIDES ROUNDED.

Class α. Sides rounded as though part of circle.

933. Pin, head, and foot gone. Length, 0.024 m. Height, 0.0235 m. Ring flattened at holes on top and bottom.

Class β. Sides consist of more or less angular combinations of surfaces.

934. Complete and in working condition. Length, 0.031 m. Height, same. Outer side of ring convex, terminating in rounded obtuse angle at centre. Two grooves along rim. Inner side consists of two convex surfaces meeting at obtuse angle slightly below centre. Rivets show on top. Rectangle of head has three grooves. Rectangle of foot has two grooves. Hook on left side.

FORM 4. BAR RECTANGULAR.

Class α. Bar thin. Edges plain.

935. Pin gone. Length, 0.026 m. Height, same. Top of ring has engraved circles. Rivets appear on top. Fragment of foot (?) left.

936. Fragment. Height, 0.031 m. Has row of dotted circles near each edge of top. Rivet of foot shows on top. Hook on left. Upper part of foot round, and hook formed by cutting away on left side.

[1] To be understood here, and in the following fibulae of this type, of the tops of the shafts.

937. From east end of Stoa (III). Pin, head, and foot gone. Length, 0.031 m. Height, 0.035 m. On top, three concentric circles of dots.

938. Pin and foot gone. Length, 0.031 m. Height 0.032 m. Ornamented with two bands of circles. Head-shaft has slightly rounded top.

939. From back of South Building. Pin and part of hook gone. Length, 0.032 m. Height, 0.0315 m. Top covered with irregular punch-marks. Rivets show on top. Hook on left side.

940. Pin and head gone. Length, 0.0435 m. Height, same. Top has row of circles. Rivet of foot shows on top. Upper part of foot below is rectangular.

Class β. Bar usually thicker, and with grooved outer edge.

941. From south slope. Most of pin and part of hook gone. Length, 0.029 m. Height, 0.0285 m. Uncertain traces of ornament on top. Heavy groove on rim. Length of head, 0.0044 m. Piece of pin adheres to stub. Upper part of foot rectangular. Hook on left side.

942. Pin and head gone. Length, 0.0285 m. Height, 0.028 m. Rivets show on top. Foot formed of rectangle. Top of ring covered with punch-marks in three irregular circles.

943. Pin, head, and foot gone. Length, 0.0295 m. Height, 0.029 m. On top, three irregular circles of punch-marks. Rivets show on top.

944. From south slope. Pin, head, and foot gone. Length, 0.0464 m. Height, 0.0469 m. Upper side has horseshoe ornament. Rim has three grooves. Rivet-holes pierced through; in one, fragment of bronze. In other, fragment of iron.

Addendum to FORM 4. Uncertain to which class following fragment belongs, but probably to *Class α*.

945. From south slope. Foot and fragment of ring. Length, 0.017 m. Outer edge covered with fine irregular grooves. On inside same, probably due to corrosion. Hook on right side.

Type z. Bow has form of lion.

946. From behind South Building, 1894. Pin and hook gone. Length, 0.068 m. Height, 0.043 m. Lion represented lying down with fore feet stretched out and head up. Mouth open. Line of back rises from withers to hips. No engraving used to indicate muscles of body, but modeling broad and careful. Four claws on each fore foot; three on hind feet. Hips spread far from body. Muscles of the hind fore legs indicated by two grooves. Tail projects well out from body turning over back, to which it is joined, in S shape, and ending in bearded snake's head. Groove along top of snake's head. Eyes indicated by ridge. Beard of snake broken; originally bent forward, following curve of tail. Mane represented broadly, the metal rising sharply from behind eyes in oval round face. Faint engraved line round edge of ears. Forehead full over eyes. Nostrils slight, with raised line between reaching to mouth. From this raised line branch others to sides. Eyes oblong, with upper lids plainly marked. Teeth represented by ridge. Tongue marked. Bottom of animal in two planes, running from fore feet and tail toward centre of body. Body is hollow, but head, limbs, and tail solid. Head of fibula consists of two roll-like blocks beneath front paws; they are connected by round shaft passing from end to end. Each roll has five slight grooves. Centre of shaft surrounded by remains of iron pin. Foot of fibula just forward of root of tail.[1] For style, see under III. 5, a (p. 203, above).

Addenda to Fibulae. The following were discarded: **Type x**, Group i., *Class α*, three of uncertain form. Of Group ii., one from south slope. FORM 1, *Class α*, one. FORM 2, *Class α*, Group i., one. Probably of *Class β*, one. **Type y**, FORM 4, *Class α*, one. All the above were mere fragments. Also four broken pieces of the pins (including one from south slope), and six unclassified fragments.

C. PSEUDO-SAFETY-PINS.

Probably to be regarded as decorative straight pins with ring heads. Cf. Nos. **2081** ff. Not classed as buckles, because for such use No. **947** is ineffective, and No. **948** difficult.

947. Pin very loose on ring. Diameter of ring, 0.029 m. Length of pin, 0.031 m. Ring made of piece of elliptical wire, of which ends

[1] For style cf. *Olympia*, No. 966. According to Furtwängler, the two ends have apotropaic sense. The Olympia specimen has two rolls under fore feet, but hook under hind feet is double. It is more likely a fibula than an attached figure with something hung to the hooks, as Furtwängler takes it.

overlap and each after a single twist turns twice around the other. Rough threading on wire put on before the ends were twisted.[1]

948. From West Building. Diameter of ring, 0.02 m. Length of pin, 0.037 m. Head flat, encircling ring once. Ring of elliptical wire. Pin plays over whole circumference of ring.[2]

2. NEEDLE.

949. Not cleaned because patinated. From northeast corner near Cyclopean wall, 1893. Length, 0.1565 m. Flattens at top for eyelet, but elsewhere nearly round.

3. RINGS.

A. FINGER-RINGS.

Type a. Plain convex bar.

Form 1. Rounded convexity.

Class α. Closed.

950. From West Building. Bar worn on one side. Diameter (outside), 0.0205 m. × 0.0196 m. Height, 0.003 m.

951. Diameter (outside), 0.0245 m. × 0.023 m. Height, 0.0088 m.[3]

Class β. Open.

952. From West Building. Diameter, 0.022 m. Height, 0.0064 m.

953. Diameter, 0.027 m. × 0.021 m. Height, 0.0067 m.

954. From south slope. Diameter, 0.0245 m. × 0.0225 m. Height, 0.0057 m.

Form 2. Angular convexity.

Examples open or fragmentary.

955. From south slope. Fragment. Diameter, 0.022 m. Height, 0.004 m.

956. From West Building. Diameter, 0.0225 m. × 0.0215 m. Height, 0.0048 m.

957. From West Building. Diameter, 0.0257 m. × 0.025 m. Height, 0.0065 m.[4]

Type b. Band rings.

Form 1. Band has on outside raised moulding at top and bottom.

958. Fragment. Height, 0.0073 m.

959. Fragment. Diameter, 0.0235 m. Height, 0.0055 m.

Form 2. Band ornamented outside with parallel horizontal grooves.

960. From West Building. Diameter, 0.02 m. Height, 0.006 m. One edge thinner than other. Band has three shallow grooves.

961. Condition poor. Open. Diameter, 0.0205 m. × 0.018 m. Height, 0.0072 m. Five grooves on outside. Ridges formed by grooves have zigzag.

Form 3. Outside of band grooved and threaded. Edge grooved.

Plate LXXXIX.

962. From West Building. Fragment. Length, 0.0185 m. Height, 0.0025 m. Single groove round each edge. Outside of bar has two fine grooves, with band between plain, but outer bands have slight oblique notching.

963. From West Building. Fragment. Diameter, 0.0199 m. Height, 0.00265 m. Ornament same as that of No. **962**.

Form 4. Band inscribed on either side of engraved ornament.

964. Ring broken. Oxidized and considerably corroded. Bent. Diameter, 0.0205 m. × 0.0184 m. Height, 0.0035–0.0038 m. Thickness, 0.0006–0.0009 m. Ornament: small arc of circle ending with little circle at each end. Between ornament and beginning of inscription at right, space of 0.003 m., much corroded. At left, between ornament and last trace of letter, space of 0.002 m.

For inscription, see *Appendix* (p. 332).

Type c. Rings with solid seal.

Form 1. Plain rectangular seal.

965. From Northwest Building. Ring cracked apart, opposite seal. Diameter, 0.0235 × 0.023 m. Length of seal, 0.012 m. Bar oval, with inner side narrow and sides partially flattened. Seal seems to be plain. Crack in ring may be intentional as surfaces are smooth.

Form 2. Oval seals, with intaglio ornament.

966. From below Cyclopean wall above Stoa (III). Diameter, 0.0222 m. × 0.022 m. Bar oval, with inner side the broader. Seal thinner in centre. Length of seal, 0.0215 m. Width of seal, 0.0108 m. On seal is figure of lion seated to left. Beneath lion, a groove slanting upward to right. Tail curled back and up. Mane indicated by vertical wavy grooves. Ear indicated. Eye uncertain. Jaw clearly marked. Figure shows Oriental influence. Above head three slight indentations, perhaps merely meant to bound field, perhaps the petals of a flower.[1]

967. Diameter, 0.022 m. × 0.02 m. Bar oval; inside the narrower. Length of seal, 0.012 m. Width, 0.009 m. Groove and line of dots about edge. Design: shallow cup with projecting rim. Over this three trilobate figures.

Form 3. High circular seal, with intaglio ornament.

968. From West Building. Diameter, 0.02 m. × 0.025 m. Bar of ring decreases in size downward; is slightly oval, with broad inside. Ornamented with groups of three grooves. Seal a low truncated cone. Slight distance above bottom, a groove which seems to have contained band of whitish metal, probably electrum. Design uncertain; perhaps rosette or beetle.

Type d. Rings with swivel seals.

Form 1. Seal of ivory.

969. From southeast slope, 1894. When found, fragment of ivory seal was attached. Bar round, with wire coil at each side of seal. Diameter, 0.031 m. Bar oval in section, with narrow side to finger.

Form 2. Seal of bronze.

970. From back of South Building near retaining wall, 1894. Diameter, 0.025 m. × 0.027 m. Bar slightly elliptical, with narrow edge inside. Ends near seal have fine wire coil, of nine or ten turns. Seal a short cylinder. Diameter, 0.0122 m. Under side plain and slightly convex. Edge divided by two heavy grooves. Each band outside of these has fine groove. Design: groove next to edge, within which a fly in intaglio; work careful. Both pairs of wings have fine oblique grooving from top down and outward. Traces of antennae. Legs shown.

Addendum to **Type d.**

970 a. Fragment which had swivel seal of unknown substance. Wire coils at each side of seal. Diameter, 0.0225 m.

Plate CXXXVII.

970 b. Fragment of similar ring. Diameter, 0.035 m.

B. BRACELETS.

Plate LXXXIX.

Type a. Plain coil.

971. Ends broken. Much corroded. Outside diameter, 0.064 m. Plain bar, slightly elliptical.

Type b. Ornamented coil.

972. One end injured. Much corroded. Diameter, 0.08 m. Bar has fine, close, uneven screw-threading. On uninjured end is roll, followed by five small corrugations or rings. Probably other end was treated in same way.

Type c. Plain bar open, with ends slightly ornamented.

972 a. From back of South Building. Diameter, 0.042 m. Ends have slight ridge at tip except on inside. Bar becomes slightly smaller as it approaches ends. Bar somewhat like that in C, **Type a**, Form 2 (pp. 253 ff.). On outer edges of each end two dents probably for eyes of serpent's head. Perhaps bracelet of statuette.

Plate CXXXVII.

972 b. Diameter, 0.036 m. Bar grows smaller toward ends, which terminate in thin flat disks at nearly right angles with ring. Ends 0.0125 m. apart.[2]

Plate LXXXIX.

Type d. Hooked wire, with hollow hemispherical beads.

973. Diameter, 0.065 m. Plain wire, tapering at ends to form hook. On wire, strung through small holes, two beads. Although of same size, no sign that they were ever joined. The beads made of strip of metal, having ends joined together.

974. Diameter, 0.0075 m. Wire plain, tapering at hooks. Beads similar to those of No. **973**. Their arrangement has been disturbed. Welding of edges of bead almost imperceptible.

C. RINGS, MAINLY DECORATIVE, OF VARIOUS FORMS AND SIZES.

Type a. Plain rounded bar, usually elliptical in section.[3]

977, 979; 994 of silver; 978, of gold, has inside flattened. For examples of decorative use cf. British Museum, *Excavations in Cyprus*, p. 102, No. 30, pl. xiv., fibula with rings on bow from Amathus. So frequently in Iron Age graves in Italy. Open rings, sometimes linked together, e.g. in Brit. Mus., Gold Room, Case T, from tomb in one of the Greek islands, — five open plain gold rings linked

[1] Cf. *Olympia*, No. 1146. More buckle-shaped, Cesnola, *Salaminia* (Italian ed.), p. 69, No. 79.

[2] Cf. Ridgeway, *Early Age of Greece*, I. p. 591, fig. 150.

[3] Plain closed gold ring from Mycenae, fourth grave, No. 299. Heavy bronze rings with convex outside, inside uncertain, still with bones in them from Salamis (Myceneaean period), Athens Mus. Nos. 3585, 3586, 3591. Small plain bronze rings from Lion tomb at Chaeronea, Athens Mus., No. 9793. Cf. Zannoni, *Scavi della Certosa*, p. 67, pl. xv. No. 30 (silver), still inclosing bone.

[4] The above rings were assigned to this type and put with finger-rings, because of plain smooth finish inside.

[1] Cf. lion with flower in mouth on gold breastplate, from Regulini-Galassi tomb at Cervetri. *Museo Gregoriano*, A I pl. 28 (= Grifi, *Monumenti di Cere Antica*, pl. 1).

[2] Cf. bracelet from Amorgos (pre-Mycenaean), Ἐφημ. Ἀρχ. 1898, col. 155, pl. 8, No. 2 (Tsountas).

[3] At Mycenae, outside of tombs, plain round, apparently solid gold rings; bar slightly elliptical; Nos. 975–

FORM 1. INSIDE AND OUTSIDE OF BAR TREATED ALIKE.

Group i. Outside diameter, 0.02 m. to 0.025 m.

975. Diameter, 0.0227 m. × 0.022 m. Width of bar, 0.018 m. Bar horizontal ellipse approaching to rectangle.

The following have bar of same shape unless otherwise stated.

976. From back of South Building. Diameter, 0.0207 m. Width, 0.0013 m.–0.002 m.

977. Diameter, 0.0225 m. Width, 0.0024 m.

978. Diameter, 0.0237 m. Width, 0.0025 m.

979. Diameter, 0.0247 m. Width, 0.0025 m.

980. Diameter, 0.0245 m. Width, 0.0027 m. Bar nearly round.

981. Diameter, 0.0243 m. Width, 0.0027 m. Bar as that of No. 980.

982. Diameter, 0.0223 m. Width, 0.0028 m. Bar as that of No. 980.

983. Diameter, 0.024 m. Width, 0.003 m.

984. From south slope. Diameter, 0.025 m. Width, 0.0028 m.–0.0034 m. Bar as that of No. 980.

985. Diameter, 0.0243 m. Width, 0.0035 m.

986. Diameter, 0.0255 m. Width, 0.0038 m.

987. Diameter, 0.0244 m. Width, 0.0025 m. –0.0038 m.

988. Diameter, 0.0235 m. Width, 0.0025 m. –0.0038 m.

989. Diameter, 0.0248 m. Width, 0.0045 m.

Group ii. Outside diameter, 0.025 m. to 0.03 m.

(*a'*.) Closed.

990. Diameter, 0.0254 m. Width, 0.0017 m.–0.0025 m.

991. Diameter, 0.027 m. Width, 0.0025 m.

992. Diameter, 0.025 m. Width, 0.0025 m.

993. Diameter, 0.026 m. Width, 0.0025 m. Bar as that of No. 980.

994. Diameter, 0.0257 m. Width, 0.0026 m. –0.0029 m. Bar as that of No. 980.

995. Diameter, 0.0265 m. Width, 0.003 m.

996. Diameter, 0.0253 m. Width, 0.003 m.

997. Diameter, 0.0258 m. Width, 0.003 m.

998. Diameter, 0.0255 m. Width, 0.0031 m. Bar as that of No. 980.

999. From back of South Building. Diameter, 0.0255 m. Width, 0.003 m.

1000. Diameter, 0.025 m. Width, 0.0033 m. Bar as that of No. 980.

1001. Diameter, 0.027 m. Width, 0.0025 m.–0.0035 m.

1002. From south slope. Diameter, 0.0252 m. Width, 0.0028 m.–0.0035 m.

1003. Diameter, 0.0286 m. Width, 0.0036 m. Bar as that of No. 980.

1004. From south slope. Diameter, 0.025 m. Width, 0.0036. Bar as that of No. 980.

1005. Diameter, 0.025 m. Width, 0.003 m.–0.0036 m. Bar as that of 980.

1006. Diameter, 0.0257 m. Width, 0.0029 m. –0.0037 m. Bar as that of No. 980.

1007. Diameter, 0.025 m. Width, 0.0034 m. Bar as that of 980.

1008. Diameter, 0.0255 m. Width, 0.0033 m.

1009. Diameter, 0.027 m. Width, 0.0025 m.–0.0043 m.

1010. Diameter, 0.0245 m. Width, 0.0027 m. –0.0043 m.

1011. From back of South Building. Diameter, 0.0257 m. Width, 0.0025 m.–0.0043 m.

1012. From back of South Building. Diameter, 0.025 m. Width, 0.0035 m.

PLATE XC.

1013. Diameter, 0.0287 m. Width, 0.004 m.

1014. From back of South Building. Diameter, 0.0275 m. Width, 0.0049 m.

1015. Diameter, 0.0292 m. Width, 0.0065 m

(*b'*.) Open.

1016. Diameter, 0.0275 m. Width, 0.0023 m Ends fit closely.

Group iii. Outside diameter, 0.03 m.–0.035.

1017. Diameter, 0.034 m. Width, 0.0025 m.

1018. Diameter, 0.0315. Width, 0.0026 m.

1019. Diameter, 0.0325 m. Width, 0.0029 m. Bar as that of 980.

1020. Diameter, 0.03 m. Width, 0.005 m.–0.0062 m.

Group iv. Outside diameter, 0.035 m.–0.04 m.

(*a'*.) Closed.

1021. Diameter, 0.0354 m. Width, 0.004 m.

together; ends of rings smaller than centre. Similar group of rings from Encomi. Cf. *Excavations in Cyprus*, pl. ix. Nos. 288–295. Possibility that some of the open rings with bar tapering toward ends may be earrings; cf. Myres and Ohnefalsch-Richter, *Cyprus Museum Cat.* p. 123; Orsi, *Mon. Ant. Linc.* I. col. 863, sepoltura clxvi. from Megara Hyblaea, and IX. coll. 74, 75, fig. 27, from Pantalica. Open ring with crossed ends from Sikel village near Matera, Apulia, published by Patroni, *Mon. Ant. Linc.* VIII. coll. 497, 507, fig. 108, as finger-ring.

1022. Diameter, 0.0394 m. Width, 0.0039 m.–0.005 m.

(*b'*.) Open.

1023. Diameter, 0.035 m. Width, 0.0037 m. Bar round.

1024. Diameter, 0.0385 m. Width, 0.0047 m. Opening looks accidental.

Group v. Outside diameter, 0.04 m., or more.

(*a'*.) Closed.

1025. Diameter, 0.0444 m. Width, 0.0034 m.

1026. From back of South Building. Diameter, 0.049 m. Width, 0.0058 m.–0.0069 m.

1027. Diameter, 0.0505 m. Width, 0.0055 m.–0.0069 m.

(*b'*.) Open.

1028. Diameter, 0.043 m. Width, 0.0055 m. Opening looks accidental.

Addenda to FORM 1. It is uncertain whether the openings in the following are intentional or accidental.

1029. Diameter, 0.0215 m. Width, 0.0015 m. Bar round. Edges of opening rough; hence probably accidental.

1030. Diameter, 0.0216 m. Width, 0.0018 m. Edges of opening fairly smooth. Bar round.

1030 a. Diameter, 0.0213 m. Width, 0.009 m.

FORM 2. INSIDE SURFACE LESS ROUNDED THAN OUTSIDE. DIVISION BETWEEN SURFACES NOT DISTINCTLY INDICATED.

Group i. Outside diameter less than 0.02 m. Unless otherwise stated, all the following to No. 1099 have nearly round bar.

1031. Diameter, 0.0165 m. Width, 0.0035 m.

1032. From south slope. Diameter, 0.017 m. Width, 0.0038 m.

1033. Diameter, 0.0193 m. Width, 0.0009 m.

Group ii. Outside diameter, 0.02 m.–0.025 m.

1034. Diameter, 0.021 m. Width, 0.0013 m. (Condition so poor as to make classification uncertain.)

1035. Diameter, 0.022 m. Width, 0.0018 m.

1036. Diameter, 0.0232 m. Width, 0.002 m.

1037. Diameter, 0.0239 m. Width, 0.0018 m.

1038. Diameter, 0.0231 m. Width, 0.002 m.

1039. Diameter, 0.023 m. Width, 0.002 m.

1040. Diameter, 0.0228 m. Width, 0.0015 m.–0.0028 m. Bar higher than wide in some places.

1041. Diameter, 0.0216 m. Width, 0.0017 m.–0.0028 m.

1042. Diameter, 0.0235 m. Width, 0.002 m.

1043. From West Building. Diameter, 0.0245 m. Width, 0.0025 m.

1044. Diameter, 0.0238 m. Width, 0.0025 m.

1045. Diameter, 0.0235 m. Width, 0.0029 m.

1046. Diameter, 0.0228 m. Width, 0.0024 m.–0.0034 m.

1047. Diameter, 0.0248 m. Width, 0.0024 m.–0.0034 m.

1048. From behind South Building. Diameter, 0.0237 m. Width, 0.0025 m.–0.0035 m.

1049. Diameter, 0.0222 m. Width, 0.0023 m.–0.0035 m. Poor condition renders classification uncertain; perhaps this specimen belongs under FORM 4.

1050. Diameter, 0.0227 m. Width, 0.0015 m.–0.0037 m. (Difference due to oxidation.) Perhaps belongs under FORM 4.

1051. From behind South Building. Diameter, 0.024 m. Width, 0.0027 m.–0.004 m.

1052. From south slope. Diameter, 0.024 m. Width, 0.003 m.–0.004 m.

1053. From back of South Building. Diameter, 0.0243 m. Width, 0.0027 m.–0.004 m.

1054. Diameter, 0.0205 m. Width, 0.0032 m.

Group iii. Outside diameter, 0.025 m.–0.003 m.

1055. Diameter, 0.025 m. Width, 0.0025 m.

1056. From behind South Building. Diameter, 0.025 m. Width, 0.0025 m.

1057. From behind South Building. Diameter, 0.025 m. Width, 0.0023 m.

1058. Diameter, 0.025 m. Width, 0.0025 m.

1059. Diameter, 0.025 m. Width, 0.0028 m.

1060. Diameter, 0.025 m. Width, 0.0028 m.

1061. Diameter, 0.025 m. Width, 0.0024 m.–0.0035 m. (Difference due to oxidation.)

1062. Diameter, 0.025 m. Width, 0.002 m.–0.0035 m.

1063. Diameter, 0.0255 m. Width, 0.0029 m.

1064. Diameter, 0.026 m. Width, 0.0028 m.–0.0038 m.

1065. Diameter, 0.025 m. Width, 0.0024 m.–0.0038 m.

1066. Diameter, 0.0255 m. Width, 0.0027 m.–0.0038 m.

1067. Diameter, 0.025 m. Width, 0.0028 m.–0.0038 m. About one half of ring larger than the other. Perhaps finger-ring.

1068. Diameter, 0.025 m. Width, 0.003 m.

1069. Diameter, 0.0258 m. Width, 0.003 m.

1070. From behind South Building. Diameter, 0.026 m. Width, 0.0028 m.–0.0038 m.

1071. Diameter, 0.0257 m. Width, 0.0035 m. Bar slightly elliptical.

1072. Diameter, 0.025 m. Width, 0.0035 m.

1073. From south slope. Diameter, 0.0255 m. Width, 0.003 m.–0.0042 m.

1074. From West Building. Diameter, 0.026 m. Width, 0.0035 m.

1075. Diameter, 0.025 m. Width, 0.0034 m.–0.0045 m.

1076. Diameter, 0.027 m. Width, 0.0035 m.–0.0049 m.

1077. Diameter, 0.0285 m. Width, 0.005 m.

1078. From behind South Building. Diameter, 0.0285. Width, 0.0055 m.

1079. Diameter, 0.0265 m. Width, 0.0045 m.–0.0065 m.

Group iv. Outside diameter, 0.03 m.–0.035 m.

1080. Diameter, 0.03 m. Width, 0.0034 m.

1081. Diameter, 0.032 m. Width, 0.0036 m.

1082. Diameter, 0.0323 m. Width, 0.0045 m.

1083. Diameter, 0.032 m. Width, 0.0045 m.

1084. Diameter, 0.034 m. Width, 0.0045 m.

1085. Diameter, 0.031 m. Width, 0.0047 m.

1086. From West Building. Diameter, 0.03 m. Width, 0.0043 m.–0.0058 m.

1087. Diameter, 0.0335 m. Width, 0.0043 m.–0.006 m. Bar elliptical.

1088. From behind South Building. Diameter, 0.0335 m. Width, 0.0045 m.–0.006 m.

1089. Diameter, 0.032 m. Width, 0.008 m.

Group v. Outside diameter, 0.035 m.–0.04 m.

1090. Diameter, 0.035 m. Width, 0.0045 m.

1091. Diameter, 0.0365 m. Width, 0.004 m.–0.0055 m.

1092. From behind South Building. Diameter, 0.034 m. Width, 0.005 m.–0.006 m.

1093. Diameter, 0.035 m. Width, 0.0055 m.–0.0065 m.

1094. Diameter, 0.0385 m. Width, 0.005 m.–0.0068 m.

1095. Diameter, 0.0385 m. Width, 0.0075 m.

Group vi. Diameter, 0.04+ m.

1096. From West Building. Diameter, 0.041 m. Width, 0.008 m.[1]

Addenda to Form 2. The openings in the following are partially due to accident, whether they were originally intended to be open or not.

Group ii. **1097**. Diameter, 0.0245 m. Width, 0.003 m. One end smooth, other end rough.

Group iii. **1098**. Diameter, 0.0253 m. Width, 0.0034 m. Both ends corroded.

Group iv. **1099**. From behind South Building. Diameter, 0.031 m. Width, 0.0045 m.–0.006 m. Both ends corroded.

Form 3. Inside surface less rounded than outside. On top and bottom flat plane connecting inside and outside.

Class α. Inside surface rounded slightly in continuous curve.

Group i. Outside diameter, 0.02 m.–0.025 m.

1100. From West Building. Diameter, 0.0249 m. Width, 0.003 m.

Group ii. Outside diameter, 0.025 m.–0.03 m.

1101. Diameter, 0.025 m. Width, 0.0035 m.

1102. Diameter, 0.0257 m. Width, 0.0025 m.–0.004 m.

1103. Diameter, 0.025 m. Width, 0.004 m.

1104. Diameter, 0.027 m. Width, 0.0049 m.

Group iii. Outside diameter, 0.03 m.–0.035 m.

1105. Diameter, 0.03 m. Width, 0.006 m.

Class β. Inner convexity consists of two surfaces which meet in rounded obtuse angle.

Group i. Outside diameter, 0.02 m.–0.025 m.

(*a'*.) Closed.

1106. Diameter, 0.02 m. Width, 0.001 m. (Half of one side is of Form 4.)

1107. Diameter, 0.0235 m. Width, 0.0018 m.

1108. Diameter, 0.022 m. Width, 0.002 m.

1109. From West Building. Diameter, 0.0237 m. Width, 0.002 m.

1110. From West Building. Diameter, 0.024 m. Width, 0.0024 m.

1111. Diameter, 0.0227 m. Width, 0.0023 m.

1112. From West Building. Diameter, 0.0235 m. Width, 0.0025 m.

1113. Diameter, 0.0225 m. Width, 0.0027 m.–0.004 m.

(*b'*.) Open.

1114. Diameter, 0.0245 m. Width, 0.002 m.

Group ii. Outside diameter, 0.025 m.–0.03 m.

1115. Diameter, 0.025 m. Width, 0.0025 m.

Addenda to Form 3. In the following the width of the original opening is uncertain.

[1] For example of such rings used as handles, see Orsi, *Mon. Ant. Linc.* I. col. 801.

Class α. Group i.

1116. Diameter, 0.023 m. Width, 0.0023 m.–0.0037 m. Ends corroded.

Group iii. 1117. From behind South Building. Diameter, 0.03 m. Width, 0.0031 m.–0.0057 m. (Oxidized.)

Form 4. Similar to Form 3 except that inside and outside surfaces meet on top and bottom[1] edge of ring.

Class α. Inner convexity rounded in continuous curve.

Group i. Outside diameter, 0.015 m.–0.02 m.

1118. Diameter, 0.0176 m. Width, 0.013 m.

1119. Diameter, 0.018 m. Width, 0.001 m.–0.003 m.

Group ii. Outside diameter, 0.02 m.–0.025 m.

(*a'*.) Closed.

1120. Diameter, 0.02 m. Width, 0.0014 m. This and 1121 and 1122 are perhaps finger-rings.

1121. Diameter, 0.0234 m. Width, 0.001 m.

1122. Diameter, 0.021 m. Width, 0.0014 m.

1123. Diameter, 0.023 m. Width, 0.0015 m.

1124. Diameter, 0.0227 m. Width, 0.0018 m.

1125. From behind South Building. Diameter, 0.0227 m. Width, 0.0014 m.

1126. Diameter, 0.0228 m. Width, 0.0013 m.

1127. Diameter, 0.022 m. Width, 0.0015 m.

1128. From behind South Building. Diameter, 0.022 m. Width, 0.0017 m.

1129. From West Building. Diameter, 0.022 m. Width, 0.0017 m.

1130. Diameter, 0.0229 m. Width, 0.0016 m.

1131. Diameter, 0.023 m. Width, 0.0015 m.

1132. Diameter, 0.022 m. Width, 0.0016 m.

1133. Diameter, 0.024 m. Width, 0.0015 m.

1134. Diameter, 0.022 m. Width, 0.0015 m.

1135. From south slope. Diameter, 0.0224 m. Width, 0.0017 m.

1136. Diameter, 0.0228 m. Width, 0.0015 m.

1137. Diameter, 0.0228 m. Width, 0.0015 m.

1138. Diameter, 0.0228 m. Width, 0.0017 m.

1139. Diameter, 0.022 m. Width, 0.0015 m.

1140. Diameter, 0.0235 m. Width, 0.0015 m.

1141. Diameter, 0.022 m. Width, 0.0014 m.–0.0027 m.

1142. From West Building. Diameter, 0.021 m. Width, 0.0018 m.

1143. Diameter, 0.022 m. Width, 0.0019 m.

1144. Diameter, 0.023 m. Width, 0.0018 m.

1145. Diameter, 0.0236 m. Width, 0.0015 m.

1146. From West Building. Diameter, 0.0223 m. Width, 0.0025 m.

1147. Diameter, 0.022 m. Width, 0.0025 m.

1148. Diameter, 0.0235 m. Width, 0.0022 m.

1149. Diameter, 0.0225 m. Width, 0.002 m.

1150. Diameter, 0.0222 m. Width, 0.0015 m.–0.003 m.

1151. From south slope. Diameter, 0.028 m. Width, 0.0015 m.–0.003 m.

1152. From behind South Building. Diameter, 0.0205 m. Width, 0.0013 m.

1153. Diameter, 0.024 m. Width, 0.0019 m.

1154. Diameter, 0.0235 m. Width, 0.0026 m.

1155. Diameter, 0.022 m. Width, 0.002 m.

1156. Diameter, 0.022 m. Width, 0.0017 m.

1157. Diameter, 0.0243 m. Width, 0.0025 m.

1158. Diameter, 0.0206 m. Width, 0.002 m.

1159. Diameter, 0.0225 m. Width, 0.0017 m.

1160. Diameter, 0.0232 m. Width, 0.002 m.

1161. Diameter, 0.0215 m. Width, 0.002 m.–0.0033 m.

1162. Diameter, 0.0235 m. Width, 0.0024 m.

1163. Diameter, 0.0245 m. Width, 0.0027 m.

1164. Diameter, 0.0235 m. Width, 0.002 m.–0.0035 m.

1165. Diameter, 0.0227 m. Width, 0.0023 m.

1166. From behind South Building. Diameter, 0.0244 m. Width, 0.0023 m.–0.0035 m.

1167. From south slope. Diameter, 0.0225 m. Width, 0.0023 m.–0.0036 m.

1168. Diameter, 0.0224 m. Width, 0.002 m.–0.0037 m.

1169. Diameter, 0.0235 m. Width, 0.002 m.–0.0038 m.

1170. Diameter, 0.0245 m. Width, 0.0025 m.–0.004 m.

1171. Diameter, 0.0235 m. Width, 0.0027 m.–0.004 m.

1172. From south slope. Diameter, 0.024 m. Width, 0.002 m.

(*b'*.) Open.

1173. Diameter, 0.024 m. Width, 0.0018 m. Ends close together; opening diagonal and probably intentional.

1174. Diameter, 0.023 m. Width, 0.0018 m. Opening probably accidental.

Group iii. Outside diameter, 0.025 m.–0.03 m.

1175. Diameter, 0.026 m. Width, 0.0015 m.

[1] The rings have neither 'top' nor 'bottom,' but these words are perhaps more intelligible than 'plane of the diameter' or a similar expression.

1176. Diameter, 0.026 m. Width, 0.0022 m.
1177. Diameter, 0.025 m. Width, 0.0025 m.
1178. Diameter, 0.026 m. Width, 0.0022 m.
1179. From West Building. Diameter, 0.0255 m. Width, 0.003 m.
1180. Diameter, 0.025 m. Width, 0.0032 m.
1181. Diameter, 0.025 m. Width, 0.0015 m.–0.004 m. (Corroded and oxidized.)
1182. From south slope. Diameter, 0.0026 m. Width, 0.0022 m.
1183. Diameter, 0.025 m. Width, 0.0033 m.
1184. Diameter, 0.0255 m. Width, 0.0029 m.
1185. From south slope. Diameter, 0.0265 m. Width, 0.0037 m.
1186. From West Building. Diameter, 0.0285 m. Width, 0.0045 m.
1187. From West Building. Diameter, 0.028 m. Width, 0.0027 m.

Group iv. Outside diameter, 0.03 m.–0.035 m.

1188. From West Building. Diameter, 0.0325 m. Width, 0.004 m.
1189. Diameter, 0.032 m. Width, 0.0049 m.
1190. South slope. Diameter, 0.034 m. Width, 0.0065 m.–0.009 m.

Group v. Outside diameter, 0.035 m.–0.04 m.

1191. Diameter, 0.036 m. Width, 0.0053 m.

Class β. Inner convexity consists of two surfaces which meet in a rounded obtuse angle.

Group i. Outside diameter, 0.02 m.–0.025 m.

(*a'.*) Closed.

1192. Diameter, 0.0208 m. Width, 0.0011 m.
1193. Diameter, 0.0217 m. Width, 0.0015 m.
1194. Diameter, 0.023 m. Width, 0.0017 m.
1195. Diameter, 0.023 m. Width, 0.0017 m.
1196. Diameter, 0.023 m. Width, 0.0018 m.
1197. Diameter, 0.023 m. Width, 0.0018 m.
1198. From West Building. Diameter, 0.02 m. Width, 0.0018 m.
1199. From south slope. Diameter, 0.024 m. Width, 0.0019 m.
1200. Diameter, 0.0215 m. Width, 0.0019 m.
1201. Diameter, 0.022 m. Width, 0.0019 m.
1202. Diameter, 0.0217 m. Width, 0.0019 m.
1203. Diameter, 0.0209 m. Width, 0.002 m.
1204. Diameter, 0.0204 m. Width, 0.002 m.
1205. Diameter, 0.0218 m. Width, 0.002 m.
1206. Diameter, 0.0225 m. Width, 0.002 m.
1207. Diameter, 0.0225 m. Width, 0.002 m.
1208. Diameter, 0.024 m. Width, 0.002 m.
1209. Diameter, 0.024 m. Width, 0.0021 m.
1210. Diameter, 0.023 m. Width, 0.0021 m.
1211. Diameter, 0.022 m. Width, 0.0022 m.
1212. Diameter, 0.023 m. Width, 0.0022 m.
1213. Diameter, 0.0225 m. Width, 0.0022 m.
1214. Diameter, 0.0225 m. Width, 0.0022 m.
1215. Diameter, 0.0225 m. Width, 0.0022 m.
1216. Diameter, 0.0224 m. Width, 0.0022 m.
1217. Diameter, 0.022 m. Width, 0.0022 m.
1218. Diameter, 0.022 m. Width, 0.0022 m.
1219. From West Building. Diameter, 0.0249 m. Width, 0.0022 m.
1220. Diameter, 0.0232 m. Width, 0.0022 m.
1221. Diameter, 0.024 m. Width, 0.0023 m.
1222. Diameter, 0.0205 m. Width, 0.0023 m.
1223. Diameter, 0.0245 m. Width, 0.0025 m.
1224. From behind South Building. Diameter, 0.0228 m. Width, 0.0025 m.
1225. Diameter, 0.0235 m. Width, 0.0025 m.
1226. From south slope. Diameter, 0.023 m. Width, 0.0025 m.
1227. Diameter, 0.023 m. Width, 0.0025 m.
1228. From West Building. Diameter, 0.0217 m. Width, 0.0025 m.
1229. Diameter, 0.023 m. Width, 0.0025 m.
1230. Diameter, 0.0217 m. Width, 0.0025 m.
1231. Diameter, 0.0213 m. Width, 0.0025 m.
1232. Diameter, 0.023 m. Width, 0.0025 m.
1233. Diameter, 0.0215 m. Width, 0.0025 m.
1234. Diameter, 0.023 m. Width, 0.0025 m.
1235. Diameter, 0.023 m. Width, 0.0025 m.
1236. Diameter, 0.0225 m. Width, 0.0025 m.
1237. Diameter, 0.023 m. Width, 0.0027 m.
1238. Diameter, 0.024 m. Width, 0.0027 m.
1239. Diameter, 0.0248 m. Width, 0.0027 m.
1240. Diameter, 0.024 m. Width, 0.0027 m.
1241. Diameter, 0.0243 m. Width, 0.0028 m.
1242. From West Building. Diameter, 0.024 m. Width, 0.0029 m.
1243. Diameter, 0.0225 m. Width, 0.0029 m.
1244. Diameter, 0.0225 m. Width, 0.0029 m.
1245. Diameter, 0.023 m. Width, 0.0029 m.
1246. From south slope. Diameter, 0.024 m. Width, 0.003 m.
1247. Diameter, 0.022 m. Width, 0.003 m.
1248. Diameter, 0.024 m. Width, 0.003 m.
1249. From behind South Building. Diameter, 0.021 m. Width, 0.003 m.
1250. Diameter, 0.021 m. Width, 0.003 m.
1251. Diameter, 0.0233 m. Width, 0.003 m.
1252. Diameter, 0.024 m. Width, 0.003 m.
1253. Diameter, 0.024 m. Width, 0.003 m.
1254. Diameter, 0.024 m. Width, 0.003 m.

1255. Diameter, 0.024 m. Width, 0.003 m.
1256. Diameter, 0.0243 m. Width, 0.003 m.
1257. Diameter, 0.0245 m. Width, 0.003 m.
1258. From behind South Building. Diameter, 0.0234 m. Width, 0.003 m.
1259. Diameter, 0.024 m. Width, 0.0032 m.
1260. Diameter, 0.024 m. Width, 0.0032 m.
1261. Diameter, 0.023 m. Width, 0.0032 m.
1262. Diameter, 0.023 m. Width, 0.0035 m.
1263. Diameter, 0.0242 m. Width, 0.0035 m.
1264. Diameter, 0.022 × 0.03 m. Width, 0.0035 m.
1265. From behind South Building. Diameter, 0.024 m. Width, 0.0035 m.
1266. Diameter, 0.0249 m. Width, 0.0036 m.
1267. From south slope. Diameter, 0.0232 m. Width, 0.0036 m.
1268. Diameter, 0.0243 m. Width, 0.0036 m.
1269. From south slope. Diameter, 0.0243 m. Width, 0.0036 m.
1270. Diameter, 0.0243 m. Width, 0.0036 m.
1271. From south slope. Diameter, 0.024 m. Width, 0.0039 m.
1272. Diameter, 0.024 m. Width, 0.0039 m.
1273. Diameter, 0.024 m. Width, 0.004 m.
1274. Diameter, 0.0223 m. Width, 0.004 m.
1275. Diameter, 0.0235 m. Width, 0.004 m.
1276. From West Building. Diameter, 0.0243 m. Width, 0.004 m.
1277. Diameter, 0.0249 m. Width, 0.004 m.
1278. Diameter, 0.024 m. Width, 0.004 m.
1279. Diameter, 0.024 m. Width, 0.004 m.
1280. Diameter, 0.0245 m. Width, 0.0042 m.
1281. From south slope. Diameter, 0.0248 m. Width, 0.0049.

(*b'.*) Open, but opening in all cases probably accidental.

1282. Diameter, 0.0225 m. Width, 0.0017 m.
1283. Diameter, 0.024 m. Width, 0.0023 m.
1284. Diameter, 0.024 m. Width, 0.0023 m.
1285. Diameter, 0.0225 m. Width, 0.0023 m.
1286. From south slope. Diameter, 0.022 m. Width, 0.0026 m.
1287. From south slope. Diameter, 0.024 m. Width, 0.004 m.
1288. From behind South Building. Diameter, 0.0245 m. Width, 0.004 m.
1289. Diameter, 0.0214 m. Width, 0.004 m.

Group ii. Outside diameter, 0.025 m.–0.03 m.

(*a'.*) Closed.

1290. Diameter, 0.0254 m. Width, 0.0025 m.
1291. Diameter, 0.0258 m. Width, 0.0025 m.
1292. Diameter, 0.025 m. Width, 0.0026 m.
1293. Diameter, 0.025 m. Width, 0.0026 m.
1294. From behind South Building. Diameter, 0.025 m. Width, 0.0026 m.
1295. Diameter, 0.025 m. Width, 0.0027 m.
1296. Diameter, 0.0282 m. Width, 0.0028 m.
1297. Diameter, 0.0257 m. Width, 0.0029 m.
1298. Diameter, 0.0255 m. Width, 0.003 m.
1299. From behind South Building. Diameter, 0.0283 m. Width, 0.003 m.
1300. Diameter, 0.026 m. Width, 0.0033 m.
1301. Diameter, 0.025 m. Width, 0.0034 m.
1302. Diameter, 0.0255 m. Width, 0.0034 m.
1303. Diameter, 0.0255 m. Width, 0.0034 m.
1304. From behind South Building. Diameter, 0.0263 m. Width, 0.0034 m.
1305. Diameter, 0.025 m. Width, 0.0034 m.
1306. Diameter, 0.0255 m. Width, 0.0034 m.
1307. Diameter, 0.0258 m. Width, 0.0035 m.
1308. Diameter, 0.0278 m. Width, 0.0035 m.
1309. Diameter, 0.026 m. Width, 0.0035 m.
1310. Diameter, 0.0265 m. Width, 0.0035 m.
1311. From south slope. Diameter, 0.0263 m. Width, 0.0035 m.
1312. From south slope. Diameter, 0.0255 m. Width, 0.0035 m.
1313. Diameter, 0.0255 m. Width, 0.0035 m.
1314. Diameter, 0.0265 m. Width, 0.0035 m.
1315. Diameter, 0.026 m. Width, 0.0036 m.
1316. Diameter, 0.0275 m. Width, 0.0037 m.
1317. Diameter, 0.0263 m. Width, 0.0038 m.
1318. Diameter, 0.025 m. Width, 0.004 m.
1319. From south slope. Diameter, 0.026 m. Width, 0.004 m.
1320. Diameter, 0.026 m. Width, 0.004 m.
1321. From south slope. Diameter, 0.025 m. Width, 0.004 m.
1322. Diameter, 0.026 m. Width, 0.004 m.
1323. Diameter, 0.026 m. Width, 0.0043 m.
1324. Diameter, 0.0258 m. Width, 0.0043 m.
1325. From behind South Building. Diameter, 0.0253 m. Width, 0.0043.
1326. Diameter, 0.0264 m. Width, 0.0043 m.
1327. Diameter, 0.0255 m. Width, 0.0044 m.
1328. Diameter, 0.027 m. Width, 0.0044 m.
1329. From south slope. Diameter, 0.026 m. Width, 0.0044 m.
1330. Diameter, 0.026 m. Width, 0.0044 m.
1331. Diameter, 0.026 m. Width, 0.0044 m.
1332. Diameter, 0.025 m. Width, 0.0044 m.
1333. From West Building. Diameter, 0.026 m. Width, 0.0044 m.
1334. Diameter, 0.0253 m. Width, 0.0044 m.

1335. From south slope. Diameter, 0.026 m. Width, 0.0044 m.

1336. Diameter, 0.0275 m. Width, 0.0047 m.

1337. Diameter, 0.0265 m. Width, 0.0049 m.

1338. Diameter, 0.0299 m. Width, 0.0049 m.

1339. From behind South Building. Diameter, 0.0285 m. Width, 0.005 m.

1340. Diameter, 0.0277 m. Width, 0.0051 m.

(*b'.*) Open; but probably owing to accident.

1341. Diameter, 0.026 m. Width, 0.0014 m.

1342. Diameter, 0.0252 m. Width, 0.0023 m.

1343. Diameter, 0.0264 m. Width, 0.0046 m.

1344. Diameter, 0.0278 m. Width, 0.0055 m.

Addenda to FORM 4, *Class β*. In the following original width of break is uncertain.

1345. Diameter, 0.0188 m. Width, 0.0013 m.

Group i.

1346. Diameter, 0.0225 m. Width, 0.0015 m.

1347. Diameter, 0.0228 m. Width, 0.0015 m.

1348. Diameter, 0.023 m. Width, 0.0019 m.

1349. Diameter, 0.0223 m. Width, 0.0023 m.

1350. Diameter, 0.022 m. Width, 0.002 m.

1351. Diameter, 0.023 m. Width, 0.0021 m.

1352. Diameter, 0.023 m. Width, 0.0024 m.

In following numbers, bent examples, the ends overlap.

1353. Diameter, 0.02 m. Width, 0.0019 m.

1354. Diameter, 0.022 m. Width, 0.0027 m.

Group ii.

1355. Diameter, 0.0278 m. Width, 0.0029 m.

1356. Diameter, 0.026 m. Width, 0.006 m.

FORM 5. TRANSITIONAL, SIMILAR TO FORM 4, BUT INSIDE AND OUTSIDE ARE FORMED EACH OF THREE FLAT PLANE SURFACES, THAT IS, A CENTRAL BAND WITH A SLOPING BEVEL AT EITHER SIDE.

1357. From behind South Building. Diameter, 0.029 m. Width, 0.0043 m.

Discards of **Type a**:

FORM 1, Group i.: one, complete, from West Building; and three fragments, of which one from south slope.

FORM 2, Group ii.: three fragments, of which one from south slope. Group iii.: two complete and two fragments. Group iv.: one fragment.

FORM 3, *Class a*, Group i.: one fragment from south slope. *Class β*: one complete.

FORM 4, *Class a*, Group ii.: eleven fragments, of which one from West Building, one from south slope, one from east end of Second Temple. Group iii.: one complete and one fragment. *Class β*, Group i.: three complete and thirteen fragments, of which one from West Building, one from south slope, and two from behind South Building. Group ii.: four fragments.

Also fourteen complete, and forty-three incomplete pieces, unclassified.

Type b. Large rings, of forms analogous to those of Type a.

FORM 1. COMBINATION OF TWO RINGS, ONE LARGER AND OPEN, SIMILAR TO **Type a**, FORM 1; THE OTHER BEING SMALLER AND ALSO CLOSED, SIMILAR TO **Type a**, FORM 2.

1358. From behind South Building. Diameter of larger ring, 0.0485 m. Width, 0.0047 m. Opening diagonal and probably original. Diameter of smaller ring, 0.032 m. Width of the same, 0.0042 m.

FORM 2. SINGLE RINGS. SOMEWHAT SIMILAR TO **Type a**, FORM 2.

1359. Much worn. Diameter, 0.059 m. Width, 0.0085 m.

FORM 3. SOMEWHAT SIMILAR TO **Type a**, FORM 3, *Class a*, BUT FLATTER.

1360. From behind South Building. Diameter, 0.0563 m. Width, 0.0032 m.

1361. Diameter, 0.0805 m. Width, 0.0067 m. Surfaces nearly flat.

FORM 4. SOMEWHAT SIMILAR TO **Type a**, FORM 4, *Class a*.

1362. Fragment. Diameter, 0.0715 m. Width, 0.005 m. On one side, uncertain traces of oblique lines.

Type c. Outside and inside convex, consisting of two flat, or nearly flat, surfaces meeting at an angle.[1]

FORM 1. ANGLES OF UPPER AND LOWER SIDES PLAIN. INNER CONVEXITY LESS THAN OUTER.

Group i. Outside diameter, 0.02 m.–0.025 m.

1363. From West Building. Diameter, 0.0238 m. Width, 0.0028 m.

1364. Diameter, 0.023 m. Width, 0.003 m.

1365. Diameter, 0.0225 m. Width, 0.003 m.

1366. Diameter, 0.023 m. Width, 0.0032 m.

1367. Diameter, 0.023 m. Width, 0.0037 m.

1368. Diameter, 0.0237 m. Width, 0.0039 m.

1369. Diameter, 0.0223 m. Width, 0.0044 m.

Group ii. Outside diameter, 0.025 m.–0.03 m.

1370. Diameter, 0.027 m. Width, 0.0029 m.

1371. Diameter, 0.025 m. Width, 0.0032 m.

1372. From behind South Building. Diameter, 0.0274 m. Width, 0.0039 m.

1373. Diameter, 0.0258 m. Width, 0.0039 m.

[1] With this type, cf. specimen from Novilara, *Mon. Ant. Linc.* V. col. 140 (Brizio).

1374. Diameter, 0.025 m. Width, 0.0049 m.

1375. From behind South Building. Diameter, 0.0265 m. Width, 0.0049 m.

1376. Diameter, 0.0297 m. Width, 0.0064 m.

1377. Diameter, 0.029 m. Width, 0.007 m.

Group iii. Outside diameter, 0.03 m.–0.035 m.

1378. Diameter, 0.031 m. Width, 0.007 m.

Group iv. Outside diameter, 0.035 m.–0.04 m.

1379. From south slope. Diameter, 0.037 m. Width, 0.008 m.

Group v. Outside diameter over 0.04 m.

1380. Diameter, 0.041 m. Width, 0.008 m.

FORM 2. INNER SURFACES CARRIED PAST JUNCTION-POINT WITH OUTSIDE SURFACES, THUS MAKING INSIDE APPARENTLY THICKER THAN OUTSIDE AND OF ABOUT EQUAL AND SOMETIMES GREATER WIDTH.[1]

Group i. Outside diameter, 0.02 m.–0.25 m.

(*a'.*) Closed.

PLATE XCI.

1381. Diameter, 0.0225 m. Width, 0.0024 m.

1382. Diameter, 0.021 m. Width, 0.0026 m.

1383. Diameter, 0.0215 m. Width, 0.0026 m.

1384. Diameter, 0.0205 m. Width, 0.0026 m.

1385. Diameter, 0.0225 m. Width, 0.0026 m.

1386. Diameter, 0.0227 m. Width, 0.0026 m.

1387. Diameter, 0.0225 m. Width, 0.0027 m.

1388. Diameter, 0.024 m. Width, 0.0028 m.

1389. Diameter, 0.0248 m. Width, 0.0028 m.

1390. From south slope. Diameter, 0.0225 m. Width, 0.003 m.

1391. Diameter, 0.024 m. Width, 0.0027 m.

1392. Diameter, 0.0225 m. Width, 0.003 m.

1393. Diameter, 0.0239 m. Width, 0.003 m.

1394. Diameter, 0.0221 m. Width, 0.003 m. Possible traces of row of dots.

1395. Diameter, 0.023 m. Width, 0.0033 m.

1396. Diameter, 0.0233 m. Width, 0.0033 m.

1397. Diameter, 0.023 m. Width, 0.0033 m.

1398. Diameter, 0.024 m. Width, 0.0033 m.

1399. Diameter, 0.024 m. Width, 0.0034 m.

1400. Diameter, 0.0245 m. Width, 0.0034 m.

1401. Diameter, 0.0235 m. Width, 0.0035 m.

1402. Diameter, 0.023 m. Width, 0.0035 m.

1403. Diameter, 0.0244 m. Width, 0.0035 m.

1404. Diameter, 0.024 m. Width, 0.0036 m.

1405. From West Building. Diameter, 0.0245 m. Width, 0.0036 m.

1406. Diameter, 0.0245 m. Width, 0.0039 m.

1407. Diameter, 0.0235 m. Width, 0.004 m.

1408. From West Building. Diameter, 0.0245 m. Width, 0.004 m.

1409. Diameter, 0.0245 m. Width, 0.004 m.

1410. Diameter, 0.0243 m. Width, 0.0047 m.

1411. Diameter, 0.024 m. Width, 0.0045 m. The following numbers are ornamented.

1412. Diameter, 0.0227. Width, 0.003 m. On one side of outer convexity, at inner and outer edge, row of short oblique lines close together. Traces of similar lines on other side.

1413. Diameter, 0.0234. Width, 0.0033 m. Ornament similar to that of No. 1412. Many of the lines have arrowhead form.

1414. Diameter, 0.0245 m. Width, 0.0035 m. Ornamentation similar.

1415. Diameter, 0.0245 m. Width, 0.004 m. Ornamentation similar.

1416. Diameter, 0.0249 m. Width, 0.0043 m. Ornamentation similar.

1417. From south slope. Diameter, 0.024 m. Width, 0.0043 m. Ornamentation similar.

(*b'.*) Open.

1418. Diameter, 0.0235 m. Width, 0.0035 m. Break probably intentional. Faint traces of same decoration.

Group ii. Outside diameter, 0.025 m.–0.03 m.

(*a'.*) Closed.

1419. Diameter, 0.026 m. Width, 0.0035 m.

1420. Diameter, 0.0255 m. Width, 0.0035 m.

1421. From behind South Building. Diameter, 0.0255 m. Width, 0.0035 m.

1422. Diameter, 0.0256 m. Width, 0.0036 m.

1423. Diameter, 0.025 m. Width, 0.0038 m.

1424. Diameter, 0.0257 m. Width, 0.0038 m.

1425. Diameter, 0.0252 m. Width, 0.0042 m.

1426. Diameter, 0.0259 m. Width, 0.0047 m.

1427. Diameter, 0.0254 m. Width, 0.0047 m.

1428. Diameter, 0.0255 m. Width, 0.0047 m.

1429. From south slope. Diameter, 0.025 m. Width, 0.0047 m.

1430. Diameter, 0.025 m. Width, 0.0047 m.

1431. From behind South Building. Diameter, 0.0264 m. Width, 0.0047 m.

1432. Diameter, 0.025 m. Width, 0.0049 m.

1433. From behind South Building. Diameter, 0.0258 m. Width 0.0052 m.

1434. From behind South Building. Diameter, 0.0258 m. Width, 0.0053 m.

1435. Diameter, 0.028 m. Width, 0.0055 m. The following are ornamented.

[1] Cf. *Olympia*, No. 443.

1436. Diameter, 0.026 m. Width, 0.0032 m. Both sides have two rows of fine lines.

1437. Diameter, 0.0252 m. Width, 0.0035 m. Both sides have two rows of fine irregular hooked lines. Cf. No. 1413.

1438. Diameter, 0.0251 m. Width, 0.0039 m. On one side, inner band of short parallel oblique lines. On other side, traces of same on both edges.

1439. From south slope. Diameter, 0.0265 m. Width, 0.004 m. One side has outer row of lines and inner row of dots; on other side, outer lines visible, but dots uncertain.

1440. Diameter, 0.0255 m. Width, 0.004 m. One side similar to No. **1436**.

1441. From south slope. Diameter, 0.0254 m. Width, 0.004 m. Both sides similar to No. **1436**.

1442. Diameter, 0.025 m. Width, 0.0043 m. Ornament similar to that of No. **1436**, but lines oblique.

1443. Diameter, 0.0253 m. Width, 0.0044 m. On one side, groove at outer edge and row of oblique lines at inner edge with zigzag connecting the two.

1444. Diameter, 0.026 m. Width, 0.0044 m. Ornament similar to that of No. **1442**.

1445. Diameter, 0.0265 m. Width, 0.00245 m. Ornament probably similar to that of No. **1442**, but one row on one side doubtful.

1446. From West Building. Diameter, 0.025 m. Width, 0.0045 m. Ornament similar to that of No. **1436**.

1447. From West Building. Diameter, 0.0255 m. Width, 0.0045 m. Ornament similar to that of No. **1442**.

1448. From south slope. Diameter, 0.0265 m. Width, 0.0047 m. Ornament similar to that of No. **1436**, but lines shorter.

1449. From south slope. Diameter, 0.027 m. Width, 0.0057 m. On both sides, row of short oblique lines at inner angle, and of dots just outside centre.

(b'.) Open.

1450. From West Building. Diameter, 0.026 m. Width, 0.005 m. Edges of opening close. Traces of ornament like preceding numbers.

FORM 3. EDGES FLATTENED, SOMETIMES WITH CONVEXITY LIKE A ROLL.

Class α. *Outer convexity similar to that of preceding* FORM 2.

Group i. Outside diameter, 0.025 m.–0.03 m.

(a'.) Closed.

1451. Diameter, 0.026 m. Width, 0.0045 m.

1452. Diameter, 0.0275 m. Width, 0.0052 m.

(b'.) Open (apparently).

1453. Diameter, 0.0276 m. Width, 0.005 m. Opening joined at bottom; perhaps due to oxidation.

Group ii. Outside diameter, 0.03 m.–0.035 m.

1454. Diameter, 0.032 m. Width, 0.0051 m. Groove round about half ring on outer edge of one flange.

Class β. *At either side of outer angle of outer convexity, a groove.*

1455. Diameter, 0.025 m. Width, 0.005 m. Traces of notching on band between grooves.

Class γ. *Raised band at outer angle of outer convexity is grooved.*

1456. Diameter, 0.035 m. Width, 0.0085 m. Raised band low and slight.

Addendum to FORM 3.

1457. Diameter, 0.0245 m. Width, 0.0047 m. Type doubtful. Ends overlap. Both surfaces of outer convexity have band of arrowheads. Near ends are grooves encircling bar, two on one end, three and a half on other.

Discards of **Type c**:

FORM 1, Group i.: two.

FORM 2, Group i.: one complete and twelve broken, of which one from behind South Building and two from south slope. Group ii.: three complete and nine broken, of which two from behind South Building.

FORM 3, *Class* α, Group i.: two nearly complete.

Combinations of **Types a** *and* **c**.

1458. Ring of **Type a**, FORM 4, *Class* β, Group ii., (a') oxidized together with one of **Type c**, FORM 2, Group ii., (a'). First: diameter, 0.025 m. Width, 0.0023 m. Second: diameter, 0.025 m. Width, 0.0045 m., with traces on each side of line of dots. Oxidation prevents certainty as to original condition.

1459. Ring of **Type a**, FORM 4, *Class* α, Group ii., (a') joined by wire to one of **Type c**, FORM 2, Group i., (a'). First: diameter, 0.022 m. Width, 0.0024 m. Second: diameter, 0.0233 m. Width, 0.0034 m. Connecting wire round and of shape like No. **810**.

Type d. Bar nearly rectangular. Plain open rings.

1460. Diameter, 0.022 m. Width, 0.0025 m. Ends show slight taper and overlap.

1461. Diameter, 0.0304 m. Width, 0.003 m. Ends taper and overlap.

Type e. Plain. Bar flat on under side, but rounded on top and sides.

1462. From south slope. Diameter, 0.0225 m. Width, 0.0033 m. Groove on bottom near inner edge.

Type f. Plain, slightly elliptical bar. Ring open and end coiled.

1463. One end broken. Diameter, 0.026 m. Width, 0.0037 m.

Type g. Threaded elliptical bar. Open.

1464. From West Building. Diameter, 0.0265 m. Width, 0.0036 m. Four parallel threads.

Type h. Band rings (plain) of nearly uniform thickness; inside flat or very slightly convex; outside slightly convex.

1465. Diameter, 0.0245 m. Width, 0.002 m.

1466. Diameter, 0.0275 m. Width, 0.0008 m.

Type i. Plain solid band rings with inside flat, outside convex, and thin edges.[1]

FORM 1. OUTER SURFACE DOES NOT HAVE POINT OF GREATEST CONVEXITY PROMINENT.

(a'.) Closed.

1467. From behind South Building. Diameter (inside), 0.019 m. Height, 0.0105 m.

1468. Diameter (inside), 0.0193 m. Height, 0.0114 m. On inside, thin metal band runs around with ends overlapping.

(b'.) Open.

1469. Diameter (inside), 0.019 m. Height, 0.0123 m.

FORM 2. POINT OF GREATEST CONVEXITY PROMINENT.

1470. Diameter (inside), 0.0185 m. Height, 0.0099 m.

1471. From south slope. Diameter (inside), 0.0194 m. Height, 0.01 m.

1472. Diameter (inside), 0.018 m. Height, 0.0113 m.

1473. Diameter (inside), 0.018 m. Height, 0.012 m.

1474. Diameter (inside), 0.0195 m. Height, 0.0125 m.

1475. Diameter (inside), 0.0205 m. Height, 0.0128 m.

1476. Diameter (inside), 0.0205 m. Height, 0.013 m.

1477. From West Building. Diameter (inside), 0.017 m. Height, 0.014 m.

1478. Diameter (inside), 0.0185 m. Height, 0.0145 m.

1479. Diameter (inside), 0.022 m. Height, 0.017 m.

1480. From West Building. Diameter (inside), 0.02 m. Height, 0.02 m.

Discards: FORM 1, one fragment.

Type j. Similar to preceding, but edges are broader and protrude over inside, which thus becomes concave. One example ornamented.[2]

1481. Diameter (outside), 0.025 m. Height, 0.0055 m.

1482. From behind South Building. Diameter, 0.028 m. Height, 0.0155 m. Ornamented with engraved line around centre and irregular zigzag at each side.[3]

Type k. Similar to type i. Exterior convex, though portions between either edge and line of greatest convexity are concave.

(a'.) Closed.

1483. Diameter (inside), 0.019 m. Height, 0.0154 m.

1484. Diameter (inside), 0.0198 m. Height, 0.0155 m.

1485. Diameter (inside), 0.02 m. Height, 0.0155 m. On inside, a flat spiral band going nearly twice around middle. Width, 0.0035 m. Probably not attached.

1486. Diameter (inside), 0.0192 m. Height, 0.0115 m.

1487. Diameter (inside), 0.0195 m. Height, 0.0228 m.[4]

1488. Diameter (inside), 0.0219 m. Height, 0.023 m.

1489. Diameter (inside), 0.02 m. Height, 0.029 m.

(b'.) Open.

1490. Diameter (inside), 0.019 m. Diameter (outside), 0.0225 m. Height, 0.008 m.

1491. From behind South Building. Diameter (inside), 0.0197 m. Height, 0.0109 m.

1492. From behind South Building. Diameter (inside), 0.019 m. Height, 0.013 m.

1493. From south slope. Diameter (inside), 0.019 m. Height, 0.0165 m.

1494. Diameter (inside), 0.0198 m. Height, 0.02 m. Opening straight with beveled edges.

1495. Diameter (inside), 0.0195 m. Height,

[1] With this type cf. *Olympia*, Nos. 434–436, especially last, which is common there, according to Furtwängler.

[2] Cf. gold ring in museum at Eleusis with outside plain and convex and inside concave.

[3] Drawing somewhat inaccurate. [4] Cf. *Olympia*, No. 435.

0.0108 m. Opening straight, with beveled edges. Fine engraved line close to outer edges, and close to centre on each side. Between each two lines, zigzag. Zigzag made of minute arrowheads.

Discards of **Type k**: one open, one closed, one fragment.

Type l. Central convexity sharply marked. Closed.

FORM 1. RATHER THIN AND SOMEWHAT SIMILAR TO **Type k**.

1496. From south slope. Diameter (inside), 0.0214 m. Height, 0.0235 m.

FORM 2. SHARPLY DEFINED NARROW CONVEXITY, FROM WHICH THE ENDS TAPER OFF SLIGHTLY.

1497. From West Building. Diameter (inside), 0.017 m. Height, 0.0215 m.

Type m. Similar to Type l, but ends terminate in rim. Closed.

1498. From West Building. Diameter (inside), 0.021 m. Height, 0.0425 m. Each end has zigzag between centre and rim. Line of zigzag is itself a fine zigzag.

Type n. Rings of sheet bronze, sometimes rather thick, with form of plain, straight bands, with or without engraved or punched ornamentation.

(*a'*.) Closed and unornamented.

1499. Diameter (inside), 0.0184 m. Height, 0.0125 m.

1500. Inside diameter, 0.019 m. Height, 0.026 m.

1501. Inside diameter, 0.015 m. Height, 0.028 m.

The above appear to be ferrules.

(*b'*.) Open and ornamented.

1502. Diameter (inside), 0.016 m. Height, 0.063 m. Zigzag on outside, from end to end, like that of No. **1498**.

1503. Diameter (inside), 0.0215 m. Height, 0.0091 m. Zigzag on outside.

1504. Diameter (inside), 0.0167 m. Height, 0.0098 m. Around centre, double band of short lines.

1505. Bent flat. Diameter, as bent, 0.0198 m. Height, 0.012 m. About centre, zigzag, from which diverge similar zigzags, running to edges at angle.[1]

1506. Part of one end gone. Diameter (inside), 0.025 m. Height, 0.0172 m. Zigzag ornamentation.

1507. Bent flat. Diameter, as bent, 0.017 m. Height, 0.027 m. Ornamented with rows of round punch-marks struck from inside. Ring coiled about one and a half times.

1508. Preservation poor. Bent flat. Diameter, as bent, 0.026 m. Height, 0.0363 m. Ring coiled. Ornamented with three rows of elliptical marks punched from inside. Part hidden by coiling not decorated.

Discarded: four.

Type o. Open ring of rather thick sheet bronze (band-ring), with end or ends terminating in coil of wire.

1509. One end broken. Diameter, 0.017 m. Width, 0.0009 m. Height, 0.0072 m.[2]

Type p. Rings of sheet bronze, with sides straight or nearly so, but with a raised band about centre, as though in imitation of the heavy rings of types k and l, from which types they are, however, distinguished by showing the concavity on the inside. Open.

FORM 1. CENTRAL RAISED ZONE NOT DISTINGUISHED FROM FIELD EXCEPT BY ELEVATION.

1510. Diameter (inside), 0.0217 m. Height, 0.0098 m.

1511. Fragment. Length, 0.04 m.

1512. Diameter (inside), 0.021 m. Height, 0.011 m. Traces of zigzag on each end.

1513. Diameter (inside), 0.02 m. Height, 0.018 m. Ends flare slightly. Each end has zigzag made of a zigzag line.

1514. Diameter (inside), 0.018 m. Height, 0.0255 m. Made of two separate pieces of bronze, one inside the other, each forming complete ring. Inner ring thicker than outer. On both ends of outer ring, traces of zigzag. Similar to that of No. **1513**.

1515. Fragment. Length, 0.032 m. Height, 0.046 m. Zigzag as before.

1516. From south slope. Condition poor. Diameter (inside), 0.0225 m. Height, 0.0528 m. Traces of zigzag.

1517. Bent flat. Diameter as bent, 0.029 m. Height, 0.054 m. Zigzag on ends, as in No. **1513**.

1518. From south slope. Fragment. Diameter (inside), 0.029 m. Height, 0.059 m. Zigzag as in No. **1513**.

FORM 2. HIGHEST PART OF RAISED CENTRAL ZONE HAS GROOVE ON EITHER SIDE.

1519. Fragment. Diameter (inside), 0.0185 m. Height, 0.0085 m. Zigzag as above.

[1] Cf. *Olympia*, No. 403.

[2] Cf. *Olympia*, No. 404.

1519 a. From below Cyclopean wall, 1893. Fragment. Diameter (inside), 0.0175 m. Height, 0.0185 m. Zigzag as above. Possibly the two above pieces are of one ring.

1520. Diameter (inside), 0.0245 m. Height, 0.0145 m. Usual zigzag.

1521. From south slope. Part gone. Bent open. Height of half of original, 0.0095 m. Close to edge, three fine engraved lines. Between them and centre, usual zigzag.

1522. Condition poor. Diameter (inside), 0.02 m. Height, 0.0195 m. Two engraved lines close to each end, and zigzag between them and centre.

1523. Bent. Diameter (inside), 0.0185 m. Height, 0.023 m. Close to edge, two lines, between which and centre, usual zigzag.

1524. Part gone. Diameter (inside), 0.0218 m. Height of half of original, 0.013 m. On one side of central raised zone, one engraved line; on other side, two. Close to outer edge, four fine lines, between which and centre, zigzag of usual sort. Attached to inside is band, about 0.008 m. in width.

Discards of **Type p**:

FORM 1: unornamented, one; ornamented, two, of which one from south slope, and one fragment.

FORM 2: ornamented, two fragments.

D. STRUCTURAL RINGS OF VARIOUS KINDS.

Type a.

1525. Broken. Diameter (outside), 0.055 m. Width, 0.0049 m. Height, 0.0055 m. Bar plain. On one side drilled hole. On opposite side excrescence. Can hardly be any sort of fibula.

Type b.

1526. Diameter, 0.049 m. and 0.052 m. Width of bar, 0.009 m. Height, 0.008 m. Outer edge forms narrow rim. Top side slopes in somewhat. Bottom flat.

Type c.

1527. From West Building. Diameter of top, 0.037 m. Diameter of bottom, 0.047 m. Top, bottom, and inside about flat. Outside slightly concave. Above bottom, engraved line.

Type d.

1528. Diameter, 0.032 m. Height, 0.004 m. Outside tapers upward. Top slopes down. Under side flat, but sloping up.

PLATE XCII.

1529. From West Building. Diameter, 0.0423 m. Inside diameter, 0.0225 m. Height, 0.005 m. Outer side beveled toward top and bottom. Upper bevel concave. Under side flat, but inner edge beveled.

1529 a. Diameter, 0.0868 m. Diameter (inside), 0.05 m. Height, 0.0105 m. Upper outer surface slopes down and out, with slight convexity. Upper inner surface slopes in with concavity. Under surface flat. Upper outer surface has two heavy grooves near top, and two lighter ones near bottom.

Type e.

1530. Nearly half gone. Diameter, 0.0465 m. Height, 0.006 m. Same general shape as No. **1529**, but outer edge corrugated with angular teeth.

1531. Diameter, 0.05 m. Height, 0.0105 m. Same shape. Top concave, slants in. Bottom flat. Outer edge corrugated.

1532. From behind South Building. Diameter, 0.04 m. Diameter (inside), 0.009 m. Outside slants up and has uneven, broad, low corrugations. Top slants inward, at first sharply, then gradually. Bottom flat. Near edge a groove, on either side of which are semicircles adjoining one another.

Type f.

1533. Diameter, 0.041 m. Diameter (inside), 0.013 m. Height, 0.001 m. and less.

PLATE CXXXVII.

1533 a. 1533 b. 1533 c. Similar to No. **1533**.[1]

PLATE XCII.

Type g.

1534. Diameter, 0.0475 m. Diameter (inside), 0.022 m. (Height inside), 0.006 m. (outside), 0.001 m. No distinction of upper and under sides. Both slightly convex.

Type h.

1535. Half gone. Diameter, 0.028 m. Diameter (inside), 0.018 m. Height, 0.002 m. Top slopes to outer edge, which has blunt pointed teeth.

Type i.

1536. Diameter, 0.057 m. Diameter (inside), 0.035 m. Height, 0.0065 m. Upper side of two surfaces; both concave, and sloping downward. Under side convex.

Type j.

1537. Condition poor. Diameter, 0.025 m.

[1] Cf. flat disk rings of diameter 0.02 m. to 0.1 m., with holes slightly larger than one third diameter. Mus. Kircheriano, *Prov. di Cosenza, Commune di Spezzano Albanese*, Necrop. di Torre del Mordillo, Tomba I. *Bull. di Palet. It.* XIV. (1888), p. 139. *Notiz. degli Scavi*, 1888, pp. 240 ff.

Diameter (inside), 0.009 m. Height, 0.0075 m. Upper surface slopes down and out. Neck rises around hole.

1538. Diameter, 0.042 m. Diameter (inside), 0.0115 m. Height, 0.008 m. Around hole, neck. Upper surface slopes down and out convexly. Under side slopes up and into neck.

1539. Diameter, 0.0645 m. Diameter (inside), 0.028 m. Height, 0.01 m. Neck tapers down. Top of neck flat. Upper surface convex. Inner surface slants upward and inward convexly.

Type k.

1540. Edges look broken. Diameter, 0.042 m. Outside of top and sides smooth; inside rough. Looks like cap for end of bar.

E. PIECES OF WIRE TWISTED INTO FORM OF RINGS. OPEN.

Type a. Rounded wire bar.

1541. Diameter, 0.185 m. Width, 0.0008 m.

1542. Diameter, 0.02 m. Width, 0.0009 m.

1543. Diameter, 0.0245 m. Width, 0.0012 m.

1544. Diameter, 0.0267 m. Width, 0.002 m.

1545. Much bent. From south slope. Diameter, 0.027 m. Width, 0.0024 m.

Discards of **Type a**: nine.

Type b. Bar irregularly rectangular.

1546. Diameter, 0.083 m. Diameter (inside), 0.067 m. Width, of bar, circ. 0.004 m. Bar mostly rectangular, but projecting end twisted and flattened. Object uncertain, but the elaborate knot can hardly be unintentional.

4. BEADS.

Type a.

1547. Length, 0.04 m. Diameter, 0.0165 m. Slightly concave from centre to ends.[1]

Type b.[2]

1548. Length, 0.051 m. Diameter, 0.02 m. Concave from centre to ends.

1549. Length, 0.061 m. Diameter, 0.0325 m. Concave ends.

1550. In part destroyed. Length (estimated), 0.066 m. Diameter, 0.0355 m. Concave ends.

Type c.

1551. From near wall behind west end of Stoa. Length, 0.0245 m. Diameter, 0.022 m.[3]

Type d.

1552. Length, 0.017 m. Diameter, 0.0225 m. Hole rectangular. One end slightly smaller than other and across it a groove. Convex from centre to ends.[4]

5. PENDANTS.

I. RING-FORM.

1553. Uncertain whether complete. Plain rounded wire coiled once with ends hanging down straight. Length, 0.022 m. Diameter of coil, 0.016 m. One end (and probably other) swells into small knob.

1554. From east of Second Temple. Horse-shoe-shaped wire, with ends bent outward and on each a disk. Height, 0.0265 m.

1555. From south slope. Three rings attached in triangular form. Diameters, 0.017 m.; 0.0185 m.; 0.0185 m. On one side engraved line between rings.[5]

II. WITH HOLE FOR SUSPENSION.

1556. From south slope. Bell-shaped object. Height, 0.0195 m. Four lines round bottom and three above middle.

1557. Height, 0.0385 m. Base square, 0.017 m. Lower part sides concave, pyramidal. At top, eyelet, and between this and base, a disk. Bottom has incuse cross. Might serve as seal.[6]

1558. Height, 0.0365 m. Round base with bar rising from centre. Bar consists of two concave surfaces meeting in projecting angle. At top of upper surface a grooved ring, above which an eyelet. Rounded gable top with two grooves. Height of disk, 0.0077 m. It is hollow with bars across, dividing it into six compartments. Possibly a seal.

1559. Hoop of bronze with lump of lead attached. Height, 0.033 m.

6. MIRRORS AND MIRROR-HANDLES.

I. MIRRORS WITH HANDLES OF SAME PIECE. Handles have hole punched for suspension.

Type a. Entirely plain. Thin.

1560. Length, 0.042 m. (handle, 0.018 m.). Diameter of disk, 0.0265 m. Probably not a real mirror, but an imitation for votive purposes.

[1] Cf. *Olympia*, No. 432. Similar specimen from Megara Hyblaea, *Mon. Ant. Linc.* I. col. 890 (Orsi).

[2] With this type cf. *Olympia*, No. 444. For possible use of these beads, as well as of Nos. **1551**, **1552**, cf. *Olympia*, Nos. 814 b and 814 d.

[3] Cf. *Olympia*, No. 440. Similar one from Megara Hyblaea, *Mon. Ant. Linc.* I. col. 888 (Orsi).

[4] *Olympia*, No. 441, is similar in shape but has round hole.

[5] Cf. *Olympia*, No. 462. Also Mus. Kircheriano, 56988 (Provincia di Mantova), Commune di Casalromano, Necrop. di Fontanella. It is somewhat larger.

[6] Cf. *Olympia*, No. 430, which is more squat. Also specimen from Tegea, *Athen. Mitth.* V. p. 67, pl. iv. c.

1561. From behind South Building. Condition poor. Length, 0.14 m. (handle, 0.065 m.). Diameter of disk, 0.075 m. Made of two very thin sheets, of which outer surfaces are exactly alike, stuck together.

PLATE XCIII.

1562. Fragment. Length of handle, 0.06 m. Of one piece of metal.

Type b. Projections (or ears) at either side of upper end of handle.

Class α. Plain.

1563. Most of disk gone. Length, 0.184 m. (handle, 0.092 m.). Edges of handle slightly concave.

1564. Disk much injured. Length, 0.31 m. (handle, 0.143 m.). Disk slightly concave-convex.

Class β. Handle engraved.

PLATE XCIV.

1565. Edge of disk bent over. Piece of handle end gone. Length, 0.235 m. (handle, 0.105 m.). Rosette engraved about suspension hole, and at upper end of handle, a form of palmette. Disk slightly convex on ornamented side.

PLATE XCV.

1566. Much corroded surface. Length, 0.23 m. (handle, 0.0985 m.). Thickness of disk, 0.0008 m.–0.0017 m. Disk slightly convex. Rosette engraved round suspension hole, and above this, forming base to main design, three lines with oblique lines from centre line to outer ones. At top of handle the projections have irregular spiral. Between these run two lines with irregular criss-cross between them. Between this band and the lower one, bearded ithyphalic satyr to right (head to left) with cylix held over head in raised left hand. Feet have form of horse's hoof.[1]

Type c. Thin and plain except for border of dots in repoussé about disk and handle. Most are small and not for actual use. Rim bent back slightly, outside dots giving appearance of convexity.[2]

PLATE XCIII.

1567. Length, 0.03 m. (handle, 0.0125 m.).

1568. Length, 0.028 m. Handle broken.

1569. From cutting above Old Temple toward tents. Handle broken. Length, 0.0285 m.

1570. From south slope. Edges broken. Length, 0.034 m. Bending of rim uncertain.

1571. From cutting above Old Temple toward tents. Edges and handle broken. Length, 0.04 m. (handle, 0.013 m.). Diameter of disk, 0.0262 m.

PLATE XCIV.

1572. Length, 0.044 m. (handle, 0.0165 m.). Diameter of disk, 0.027 m. Near centre of disk, dot.

1573. End of handle gone. Length, 0.0374 m. (handle, 0.011 m.). Diameter of disk, 0.0273 m.

1574. Fragment. Diameter of disk, 0.0277 m.

1575. Handle broken. Length, 0.0404 m. Diameter of disk, 0.0335 m. In centre of disk, punch-mark.

PLATE XCV.

1576. Disk and handle broken. Diameter of disk, 0.0344 m.

1577. From West Building. Injured. Length, 0.059 m. (handle, 0.023 m.). Diameter of disk, 0.0375 m.

PLATE XCIII.

1578. Fragment. Length, 0.0765 m.

1579. Much broken. Diameter of disk (restored), 0.079 m. Edges of handles concave.

Discarded: two fragments of **Type c**.

Addenda to DIVISION I. Handles.

(*a'*.) With ears. Plain.

1580. Length, 0.0895 m.

(*b'*.) With ears. Ornamented.

PLATE XCVI.

1581. Broken in two pieces. Surface much corroded. Length, 0.134 m. Thickness, 0.0003 m.–0.0008 m. At top of central field, band with engraved braid of four coils. Within coils, a dotted circle, and dots between the two circles, others outside. At top of upper field, between ears zigzag between lines. Lower end of handle has rosette round three sides of suspension hole and zigzag beneath it, with dots opposite the openings. Above rosette, a zigzag between lines, and over the latter, row of dots surmounted by straight line. In main field of handle, a bearded draped figure to left.[3] Wears talaric chiton and himation, the latter covered with scale pattern. Lower part of tunic has four rows of pleats. Left arm raised. Diadem on head. On either side of figure inscription: see *Appendix*, p. 332.

[1] First noticed by Dr. Bulle. Drawing not quite correct.

[2] Cf. mirrors from Cotilon (Bassae), Ἐφημ. Ἀρχ. 1903, coll. 175 f., fig. 9 (Kuruniotis).

[3] For drawing cf. skirt of Artemis in *Olympia*, No. 696, and corselet, *ibid.* pl. lix.

(*c'*.) Plain handles of uncertain type. (Form of top uncertain.)

PLATE XCIII.

1582. From south slope. Length, 0.106 m.

1583. Length, 0.069 m.

1584. Length, 0.162 m.

The following seems to be ornamented.

PLATE XCVIII.

1585. Length, 0.0975 m. Central surface raised. Edges prominent. Possible traces down centre of braid-pattern.

II. MIRRORS WITH ATTACHED HANDLES.[1]

Handles only.

1586. Length, 0.095 m. Closeness of heads of rivet to handle show that disk was very thin.

1587. Lower end gone. Upper end damaged. Remaining portion broken into seven pieces. Length, 0.19 m. Made of sheet of bronze rolled over at edges. Repoussé band down centre. Along edges and centre band runs a simple twist pattern made of double lines. Foot of handle has criss-cross of fine lines at top and traces of other decoration below. Rivet in centre and at left side.

III. MIRROR WITHOUT HANDLE — DISK MIRROR.

PLATES XCVI. – XCVIII.

1588. Diameter, 0.1305 m. About edge of front, raised beaded rim. Surface rises gradually to centre. Inside rim, horseshoe or leaf pattern, with double lines. Within this, engraved line, followed by double braid pattern, the basis of which is formed by a zigzag of curved line, with a dotted circle at every angle. Within this two engraved lines. In centre of each side, a minute depression, probably due to compasses of draughtsman. Back concave and has six engraved double concentric circles. Edge of back plain.

Addenda to mirrors (*handles*).

PLATE XCVIII.

1589. Uncertain object. Bottom broken. Length, 0.066 m. Hole punched in lower part.

1589 a. Both ends gone. Length, 0.026 m. Object uncertain. Disk on slightly lower level than handle on side from which dots are struck, the depression coming between the rows of dots.

7. OBJECTS IN SHEET BRONZE.

A. DIADEMS, ETC.

Of the following fragments the majority are probably from diadems; some are perhaps from girdles, others are uncertain.

a. Fragments with ornaments of punched dots (repoussé).

PLATE XCIX.

1590. Ends gone. Length, 0.09 m. Along edges two rows of dots; another row down centre of smaller end.

1591. From behind South Building. One end gone. Length (about), 0.027 m. Dots at irregular intervals along edge and near centre.

1592. From behind South Building. Fragment. Length, 0.0235 m. Six rows of dots parallel to edge.

1593. Fragment, perhaps from centre of diadem, or girdle. Length, 0.059 m. Single curved row of dots along centre. Possibly not of diadem, but of sheet metal for covering.

The following bits are of uncertain use.

1594. From behind South Building. Fragment of hook end of diadem-like ornament. Length, 0.0135 m. Dots along each side coming together at hook. One side convex. Hook made by bending over of end of sheet of metal, and perhaps accidental.

1595. Fragment. Diadem shaped. Length, 0.043 m. Line of holes along edges.

PLATE CXXXVII.

1596. Ends gone. Length, 0.062 m. Three rows of dots, of which two are continued round broad end and two dots on ridge in centre.

PLATE XCIX.

1596 a. Ends gone. Length, 0.036 m. Rows of dots along edges and down centre.

b. Fragments with engraved ornamentation and simple semi-corrugated ends.

1597. Fragment; one end gone. Length, 0.137 m. Corrugations only go about two thirds round end. Along edges of flat part (or blade), on one side seems to be zigzag; other side plain.

1598. Similar to No. **1597**. Length, 0.1455 m. Under side of end flat as in No. **1597**. Front of blade has double zigzag along edges.

c. Blade engraved. End has form of pin-head.

1599. Ends probably broken. Length, 0.175 m. Rings and corrugations of end run all the way round. On one side a double zigzag on blade; double groove along edges and perpendicular zigzag lines running across blade from opposite angles of main zigzags. Other side plain.[1]

[1] Cf. Ἐφημ. Ἀρχ. 1903, col. 173, fig. 8, No. 2, from Cotilon (Kuruniotis).

B. DISKS.

DIVISION I. WITH HOLE IN CENTRE.[2]

Type a. Round.

FORM 1. PLAIN.

Diameter, 0.02 m.–0.025 m. Hole round.

1600. From south slope. Diameter, 0.021 m. Hole, 0.0027 m.

1601. Diameter, 0.021 m. Hole rectangular, 0.0022 m.

1602. Diameter, 0.0218 m. Hole, 0.0018 m.

1603. Diameter, 0.022 m. Hole, 0.003 m.

1604. Diameter, 0.022 m. Hole, 0.0015 m.

1605. Diameter, 0.0234 m. Hole, 0.0013 m.

1606. Diameter, 0.0235 m. Hole, 0.002 m.

The following numbers are somewhat thicker and look like washers.

1607. From behind South Building. Diameter, 0.021 m. Thickness (circ.), 0.001 m.

1608. From behind South Building. Diameter, 0.234 m. Thickness (circ.), 0.0009 m. Concave-convex.

Discard: one broken.

Diameter, 0.025 m.–0.03 m.

1609. Diameter, 0.025 m. Hole, 0.0022 m.

1610. Diameter, 0.0253 m. Hole, 0.0018 m.

1611. Diameter, 0.0265 m. Hole rectangular.

1612. Diameter, 0.0267 m. Hole, 0.001 m.

1613. From behind South Building. Diameter, 0.027 m. Hole, 0.0018 m.

1614. Diameter, 0.0276 m. Hole, 0.003 m.

1615. Diameter, 0.0284 m. Hole, 0.002 m.

1616. Diameter, 0.0284 m. Hole, 0.0028 m.

1617. From behind South Building. Diameter, 0.0292 m. Hole, 0.0015 m.

1618. Diameter, 0.0292 m. Hole, 0.0018 m.

Discards: two unbroken and twenty broken (of which two from behind South Building).

Diameter, 0.03 m.–0.035 m.

1619. Diameter, 0.03 m. — Rectangular punched hole, 0.002 m. × 0.0015 m.

1620. Diameter, 0.0304 m. Hole, 0.0018 m.

1621. Diameter, 0.0305 m. Square hole, 0.0015 m.

1622. Diameter, 0.0312 m. Hole, 0.001 m.

1623. Diameter, 0.0318 m. Hole square, 0.0017 m.

1624. Diameter, 0.0319 m. Hole, 0.019 m.

1625. Diameter, 0.0325 m. Hole, 0.0015 m.

1626. Diameter, 0.0328 m. Hole, 0.0012 m.

1627. Diameter, 0.033 m. Hole, 0.0016 m.

1628. Diameter, 0.0331 m. Hole, 0.0038 m.

1629. Diameter, 0.0333 m. Hole rectangular, 0.0015 m.

1630. Diameter, 0.0339 m. Hole, 0.0015 m.

1631. Diameter, 0.034 m. Hole, 0.0026 m.

1632. From behind South Building. Diameter, 0.034 m. Hole rectangular, 0.0025 m. × 0.0055 m.

Discards: seven complete, six (two from South Building) nearly complete, and ten fragments (one fragment behind South Building, and one from south slope).

Diameter, 0.035 m.–0.04 m.

1633. Diameter, 0.035 m. Hole, 0.002 m.

1634. Diameter, 0.035 m. Hole, 0.001 m.

1635. Diameter, 0.035 m. Hole 0.0019 m.

1636. Diameter, 0.036 m. Hole, 0.0025 m.

1637. Diameter, 0.036 m. Hole, 0.0025 m. × 0.004 m.

1638. Diameter, 0.0365 m. Hole, 0.0019 m.

1639. Diameter, 0.0365 m. Hole, 0.0015 m.

1640. From behind South Building. Diameter, 0.0365 m. Rectangular hole, 0.0019 m. × 0.002 m.

1641. Diameter, 0.0368 m. Hole, 0.0014 m.

1642. Diameter, 0.0385 m. Nearly rectangular hole, 0.0015 m.

1643. Diameter, 0.039 m. Nearly rectangular. Length, 0.0016 m. × 0.0023 m.

1644. Diameter, 0.039 m. Hole, 0.0017 m.

Discards: three complete and fourteen fragments.

Diameter, 0.04 m.–0.045 m.

1645. Diameter, 0.04 m. Hole, 0.0015 × 0.0024 m.

1646. Diameter, 0.04 m. Hole, 0.0023 m.

1647. From behind South Building. Diameter, 0.041 m. Hole, 0.0015 m.

Discarded: two fragments.

Diameter, 0.045 m.–0.05 m.

1648. Diameter, 0.0485 m. Hole, 0.0024 m.

Diameter, 0.05 m.–0.112 m.

1649. Diameter, 0.051 m. Hole, 0.0015 + 0.001 m. Second hole near edge. Diameter, 0.0037 m. × 0.0035 m.

[1] Rings and corrugations nearly identical with ends of spiral armlet from Boeotia, now in Berlin (*Jahrb.* III. p. 363, i).

[2] For plain disks with hole in centre on edge of quiver, *Olympia*, No. 717. For possible use for disks with edge, see necklaces on archaic terra-cotta figurines from Terravecchia, *Mon. Ant. Linc.* VII. coll. 239-241 (Orsi).

1650. Diameter, 0.0525 m. Rectangular hole, 0.003 m.

1651. From south slope. Diameter, 0.054 m. Hole, 0.004 m.

1652. Diameter, 0.056 m. Hole, 0.002 m.

1653. Diameter, 0.0605 m.

1654. From northeast corner of First Temple. Diameter, 0.0625 m.

1655. From West Building. Diameter, 0.063 m. Hole, 0.004 m. × 0.0055 m.

1656. Diameter, 0.072 m. Hole, 0.003 m.

1657. Diameter, 0.091 m. Hole, 0.0055 m.

1658. From behind South Building. Diameter, 0.112 m. Hole, 0.0075 m.

Not quite certain that the two following belong here.

1659. Fragment. Diameter, 0.0525 m. Hole, 0.005 m.

1660. Fragment. Diameter, 0.067 m. Hole, 0.0055 m. Besides centre hole, several rectangular ones.

Discarded: seven fragments, of which one from back of South Building.

FORM 2. ORNAMENTED.

Class α. Single circle of punched dots, usually near edge.

1661. Diameter, 0.0134 m. Hole, 0.0014 m. Concave-convex.

Diameter, 0.02 m.–0.025 m.

1662. Diameter, 0.024 m. Hole, 0.0005 m.

Diameter, 0.025 m.–0.03 m.

1663. Diameter, 0.025 m.

1664. Diameter, 0.0267 m. Hole, 0.0015 m.

1665. Diameter, 0.0294 m.

1666. Diameter, 0.0282 m. Hole, 0.0022 m.

Discarded: three.

Diameter, 0.03 m.–0.035 m.

1667. Diameter, 0.0315 m. Hole, 0.0014 m.

1668. Diameter, 0.0305 m. Two holes together in centre.

1669. Diameter, 0.033 m. Hole, 0.0011 m.

1670. Diameter, 0.034 m. Hole, 0.0024 m.

Discarded: four.

Diameter, 0.035 m.–0.04 m.

1671. Diameter, 0.035 m. Hole, 0.0012 m.

1672. Diameter, 0.035 m.

1673. From behind South Building. Diameter, 0.0355 m. Hole, 0.0017 m.

1674. Diameter, 0.0355 m. Hole, 0.0017 m.

1675. Diameter, 0.0365 m.

Discarded: four.

Diameter, 0.04 m.–0.05 m.

1676. Diameter, 0.0425 m. Hole, 0.0018 m.

Discarded: three.

Diameter, 0.045 m.–0.05 m.

1677. Diameter, 0.0475 m.

1678. Diameter, 0.0495 m. Hole, 0.003 m. × 0.0035 m.

Diameter, 0.05 m.

PLATE C.

1679. Diameter, 0.0605 m. Hole, 0.0028 m.

1680. Fragment. Diameter, 0.0725 m.

Discarded: two fragments.

Class β. Double circle of punched dots.

Diameter, 0.03 m.–0.035 m.

1681. From behind South Building. Diameter, 0.0345 m. Hole, 0.0015 m. × 0.0016 m.

1682. Diameter, 0.035 m. Hole, 0.0012 m.

Diameter, 0.04 m.–0.005 m.

1683. Fragment. Diameter, 0.041 m. Hole, 0.0017 m. × 0.003 m.

1684. Diameter, 0.049 m.

Discarded: two from behind South Building.

Class γ. Three or more rows of punched dots.

1685. Diameter, 0.0385 m. Rectangular hole, 0.0013 m. × 0.002 m.

1685 a. (PLATE CXXXVII.). Diameter, 0.0455 m.

1686. Diameter, 0.092 m.

1687. Diameter, 0.1035 m.

1688. Diameter, 0.105 m. Hole, 0.0055 m.

1689. Diameter, 0.081 m. Hole, 0.0045 m.

1690. Fragment. Diameter (approximate), 0.092 m.

Class δ. Rectangle of punched dotted circles.

1691. Diameter, 0.0384 m. Slightly concave-convex. Hole, 0.0027 m. × 0.0028 m.

Class ε. Cross and circle of punched dots.

1692. Diameter, 0.036 m. Hole, 0.0007 m.

Class ζ. Rosettes of dots with or without circles of dots.

Group i. Without circle.

1693. Diameter, 0.0405 m. Hole, 0.002 m.

Group ii. With circles.

1694. Diameter, 0.0394 m. Hole, 0.002 m.

1695. Diameter, 0.049 m. Hole, 0.0021 m.

1696. Diameter, 0.111 m. Rectangular hole, 0.0065 m. × 0.007 m.

Class η. Engraved rosettes with or without engraved circles.

Group i. Without circles.

1697. Diameter, 0.0235 m. Rectangular hole, 0.0024 m. × 0.0028 m. Slightly concave-convex.

1698. Diameter, 0.028 m. Hole, 0.001 m.

Group ii. With engraved circles.

1699. Diameter, 0.0322 m. Hole, 0.0034 m.

Type b. Elliptical.

1700. Diameter, 0.03 m. × 0.024 m. Hole, 0.0017 m. About edge, row of dots.

Type c. Rectangular, with rounded corners.

Class α. Single circle of punched dots.

1701. Diameter, 0.022 m. × 0.0315 m.

Discarded: one fragment.

Class β. Double circle of punched dots.

1702. From behind South Building. Diameter, 0.034 m. × 0.024 m. Hole, 0.0014 m.

Type d. Triangular, with rounded corners.

1703. Length, 0.0033 m. × 0.025 m. × 0.0265 m. About edge, row of punched dots.

DIVISION II. WITHOUT HOLE IN CENTRE.[1]

Type a. Plain centre and edges.

FORM 1. UNORNAMENTED. (There are no certain examples of this form.)

1704. From south slope. Much broken. Diameter, 0.037 m.

1705. Diameter, 0.054 m. Perhaps mirror disk.

1706. Diameter, 0.076 m. Perhaps mirror disk.

PLATE CI.

1707. Oval, of uncertain character. Diameter, 0.10 m. × 0.077 m.

FORM 2. ORNAMENTED.

Class α. With one circle of punched dots.

Group i. Plain centre.

1708. Broken fragment. Diameter, 0.0335 m.

Discarded: one fragment (mirror disk?), from south slope.

Group ii. Dot in centre.

(*a'*.) Struck from same side as circle.

1709. Fragment. Diameter, 0.03 m.

(*b'*.) Struck from opposite side to circle.

1710. Fragment. Diameter, 0.0322 m.

1711. Broken fragment. Diameter, 0.052 m.

Class β. With two rings of dots, each ring being double.

1712. Diameter, 0.08 m.

Type b. With edge turned over.

FORM 1. PLAIN.

1713. Diameter, 0.065 m.[2]

FORM 2. DIVIDED INTO CONCENTRIC ZONES, OF WHICH THE CONVEX SIDE IS ON SAME SIDE WITH ROLL.

Class α. With plain centre.

1714. Diameter, 0.113 m.

Class β. With two dots in centre.

1715. Diameter, 0.079 m.

Type c. Stamped rosette with hollow boss at centre and rings of dots outside.

1716. Fragment. Diameter, 0.011 m.

1716 a. Fragment.

1716 b. Fragment. From behind South Building.

Type d. Transitional.

1717. Diameter, 0.075 m. In centre, boss. Near edge, hole, 0.002 m. in diameter. Concavity probably not original. Next to boss, rays followed by ring of dots. Outside ring of dots, a ring of arrow points.

Discarded: thirty-three, unclassified, among which one from south slope and three from behind South Building.

Type e. Rectangular. Unornamented.

1718. From behind South Building. Length, 0.028 m. × 0.033 m. Corners rounded.

PLATE CXXXVII.

1718 a. Fragment.

1718 b. Fragment. Bent. Radius about 0.07 m. Rosette of punched dots at centre, outside of which broad zigzag, the line of which is itself a narrow zigzag. Beyond, two rows of dots, and a narrower zigzag. On edge, single row of dots.

C. BINDING STRIPS.

Type a. Plain. Most have one original end left, and rivets.

PLATE CI.

1719. Length, 0.0423 m. Width, 0.0048 m.

1720. Length, 0.042 m. Width, 0.0053 m. Seems complete.

1721. Length, 0.1175 m. Width, 0.0065 m.

1722. From West Building. Length, 0.285 m. Width, 0.0085 m.[3]

1723. From behind South Building. Length, 0.033 m. Width, 0.008 m.

1724. Length, 0.0534 m. Width, 0.01 m.

1725. Length, 0.105 m. Width, 0.01 m.

1726. Length, 0.128 m. Width, 0.011 m.

1727. Length, 0.129 m. Width, 0.014 m.

[1] For use, note sarcophagus of Crepereia Tryphaena (Mus. Cap., Rome; found, 1889), containing plain bronze disk about four inches in diameter. *Bullett. Commiss. Com.* 1889, pp. 175, 496.

[2] Cf. large and small plain gold disks from Mycenae (fifth tomb, No. 691), with overlapping edges as if covers.

[3] Cf. *Olympia*, No. 1226, and iron scrap from Tolentino, *Annali*, 1881, p. 217, tav. d'agg. Q No 1, called rim of shield.

1728. Length, 0.1435 m. Width, 0.0075 m.

Discarded: eighteen, of which one was from behind South Building.

Type b. With one or more disks attached by rivets.

1729. One end gone. Length, 0.044 m. Width, 0.0075 m. Fragment of disk at each end.

1730. From south slope. Ends broken. Bit of one disk. Length, 0.075. Width, 0.0078 m.

1731. Broken disk at each end. Length, 0.109. Width, 0.009 m.

1732. Broken disk at one end. Length, 0.135 m. Width, 0.011 m.

1733. Both ends gone. Length, 0.073 m. Width, 0.0118 m.

1734. Both ends and disks broken. Length, 0.105 m. Width, 0.012 m.

Discarded: four, of which one was from West Building.

Addendum. Disk ornamented with rosette.

1735. Fragment. Length, 0.089 m. Width, 0.0105 m.

Type c. With rectangular plates attached by one or more rivets.

1736. Ends gone. Length, 0.084 m. Width, 0.008 m.

1737. Broken across middle. Length, 0.211 m. Width, 0.013 m.

1738. One end gone. Length, 0.103 m. Width, 0.017 m.

1739. Fragments. Length, 0.146 m. Width, 0.02 m.

Addenda. Uncertain to which type the following number belongs.

1740. From behind South Building. Length, 0.076 m. Width, 0.0083 m.

As the following have no disk plate nor holes, it is not certain they belong here.

1741. One end gone. Length, 0.032 m. Width, 0.008 m. On one side, fine double zigzag lengthwise above centre.

1741 a. Object uncertain. Length, 0.066 m. Width, 0.012 m. Two small depressions at one end.

Discarded: nineteen others of the foregoing types.

The following pieces, while presenting analogies of form, are of uncertain classification and use.

1742. Both ends seem complete. Length, 0.058 m. Width, 0.0065.

PLATE CII.

1743. Both ends broken. Length, 0.10 m. Width, 0.0045 m. One edge beveled.

1744. Length, 0.143 m. Width, 0.007 m. One edge beveled.

1745. Both ends gone. Length, 0.09 m. Width, 0.0085 m. One edge beveled, and narrow raised band along other edge on one side.

1746. One end complete, other perhaps so. Length, 0.0562 m. Width, 0.0117 m. Thickness, 0.0015 m.–0.0028 m. All edges slightly beveled. At one end a H. See *Appendix*.

Type d. Large plain.

1747. Seems complete. Bent in middle. Length, 0.47 m. Width, 0.0575 m. Six holes punched through, in one of which (at end of band) are remains of iron rivet.

D. ORNAMENTED BANDS.

Type a.

1748. Part of one end preserved. Length, 0.0683 m. Width, 0.018 m. On one side, dots in double circle connected by tangents. Groove along edges.

Type b.

1749. Uncleaned because patinated. Found north of West Building near surface. Ends gone. Length, 0.04 m. Width, 0.008 m. Divided into three fields by two engraved lines. The larger middle field has circles connected by tangents, the two outer fields have semicircles opening outward.

Type c.

1750. Ends broken. Length, 0.121 m. Width (centre), 0.0154 m. Ends slightly wider. One side has rounded band along centre, with zigzags of double line on each side.

Type d.

1751. From behind South Building. Ends gone. Length, 0.12 m. Width, 0.054 m. Ornament of rosettes and dots.

E. COATINGS.

Type a. Rectangular. Flat surface.

FORM 1. ROW OF PUNCHED DOTS ALONG EACH SIDE.

1752. From West Building. Ends broken. Length, 0.032 m. Width, 0.011 m.[1]

Discarded: seven fragments, of which one from south slope.

FORM 2. THREE ROWS OF DOTS.

Class a. Row along each edge and one down centre.

1753. One end gone. Length, 0.0335 m. Width, 0.016 m.

[1] Cf. *Olympia*, No. 303.

1754. Length, 0.078 m. Width, 0.035 m.

1755. One end gone. Length, 0.0467 m. Width, 0.037 m.

1756. Length, 0.066 m. Width, 0.0425 m.

1757. Length, 0.074 m. Width, 0.044 m.

1758. One end gone. Length, 0.041 m. Width, 0.044 m.

1759. One end gone. Length, 0.074 m. Width, 0.0465 m.

1760. Much bent. Length, 0.058 m. Width, 0.055 m.

Discarded: two, of which one was from behind South Building.

Class β. Same as preceding, but with dots across each end.

1761. Bent. Length, 0.027 m. Width, 0.034 m.

1762. Bent and one end gone. Length, 0.046 m. Width, 0.035 m.

1763. Bent. Length, 0.084 m. Width, 0.046 m.

1764. Length, 0.078 m. Width, 0.049 m.

1765. Length, 0.094 m. Width, 0.048 m.

Discarded: seven others, of which the condition was such that it is uncertain whether they are of *Class* α or β. One came from south slope.

FORM 3. FOUR ROWS OF DOTS.

Class a. Rows parallel.

1766. Length, 0.052 m. Width, 0.0425 m.

Discarded: two.

Class β. Same as preceding, but with dots across ends.

1767. Length, 0.057 m. Width, 0.0435 m.

FORM 4. FIVE ROWS OF DOTS.

Class a. Rows parallel.

1768. End gone. Condition poor. Length, 0.049 m. Width, 0.0042 m.

Class β. Same as Class a, but with dots across ends.

Group i. Single row at end.

1769. One end gone. Length, 0.022 m. Width, 0.0415 m.

Group ii. Double row at end.

1770. Length, 0.023 m. Width, 0.033 m.

Discarded: one of doubtful character.

FORM 5. SIX ROWS OF DOTS.

1771. From behind South Building. Both ends gone. Length, 0.047 m. Width, 0.0485 m.

1772. One end gone. Condition poor. Length, 0.095 m. Width, 0.045 m.

FORM 6. SIMILAR TO PRECEDING FORMS, BUT WITH ONE OR MORE ROWS OF DOTS DOUBLED.

1773. Fragment. Length, 0.035 m. Width, 0.019 m. Double row along one edge.

PLATE CIII.

1774. Fragment. Length, 0.063 m. Width, 0.038 m. Four rows; outer row double.

1775. Fragment. Length, 0.038 m. Width, 0.06 m. Three double rows.

FORM 7. MISCELLANEOUS.

1776. Fragment. Length, 0.048 m. Width, 0.033 m. Cross rows of dots.

1777. Fragment. Length, 0.085 m. Width, 0.046 m. Rows at angle to one another.

1778. End gone. Length, 0.09 m. Width, 0.052 m. Cross rows with zigzags in each panel.

FORM 8. PUNCHED DOTS AND ENGRAVING.

1779. End gone. Length, 0.049 m. Width, 0.03 m. Three rows of dots with zigzags between.

1780. Fragment. Length, 0.057 m. Width, 0.047 m. Two rows of dots and two zigzags.

1781. End gone. Length, 0.045 m. Width, 0.0355 m. Dots and zigzags.

1782. Length, 0.069 m. Width, 0.046 m. Dots and semicircles.

Discarded of **Type a**: thirty-seven fragments, of which five were from behind South Building, one from south slope, and four from West Building.

Type b. Rectangular. In centre on long axis, a raised convex band. All except two have zigzags; of these one (No. 1783) **may have had; the other is No. 1792, in which the zigzag is apparent rather than real.**

1783. From behind South Building. Fragment. Length, 0.052 m. Width, 0.032 m.

1784. One end gone. Length, 0.062 m. Width, 0.024 m.

1785. One end gone. Length, 0.062 m. Width, 0.03 m.

1786. Fragment. From behind South Building. Length, 0.063 m. Width, 0.035 m.

1787. Length, 0.081 m. Width, 0.036 m.

1788. Length, 0.09 m. Width, 0.041 m.

1789. One end gone. Length, 0.046 m. Width, 0.042 m.

1790. Length, 0.09 m. Width, 0.045 m.

1791. Fragment. Length, 0.05 m. Width, 0.058 m.

1792. Length, 0.066 m. Width, 0.075 m.

PLATE CIV.

1793. Length, 0.013 m. Width, 0.104 m.

Discarded: nine others of **Type b**, of which three were from behind South Building.

Type c. Rectangular. Punched and stamped ornaments.

FORM 1. INCUSE.

1794 (on PLATE CIII.). From south slope. Size, 0.044 m. × 0.0445 m. Made of two sheets of bronze folded at edges. Ornament: round depression in centre; this and corners have hollows and rings arranged geometrically.

1795. Length, 0.0475 m. Width, 0.0325 m. Along edges, dots. In centre, depression with irregular knob in centre, on which knob are repoussé dots. At each end, similar figure. Holes in corners with bronze nail in one.

FORM 2. REPOUSSÉ.

1796. Length, 0.0465 m. Width, 0.024 m. Nail holes at corners. Dots on edges. Down centre a long heavy oval, each end forked. Large raised dots on each side of oval.

F. RIMS.

(Of various uncertain objects.)

1797. Fragment. Length, 0.175 m. Width, 0.075 m. Edge turned over.

1797 a. Fragment. Length, 0.0715 m. Width, 0.007 m.

1797 b. Fragment. Length, 0.103 m. Width, 0.0255 m.

1797 c. Fragment. Length, 0.034 m. Width, 0.0175 m.

Discarded: two fragments, of which one was from behind South Building.

1798. Length, 0.117 m. Width, 0.06 m. Rivets in rim. Outside of fragment convex.

1799. Length, 0.194 m. Width, 0.072 m.

1799 a. Length, 0.068 m. Width, 0.061 m. Possibly piece of preceding.

1800. From behind South Building. Fragment. Length, 0.092 m. Width, 0.048 m. Dots in relief on upper side.

Discarded: one fragment.

G. PLATES OF BRONZE.

(None are complete.)

a. Plain.

FORM 1. ATTACHED.

1801. Uncleaned. Length, 0.042 m. Width, 0.051 m. Remains of rivet.

PLATE CV.

1802. Length, 0.168 m. Width, 0.165 m. Two rivet-holes. Color indicates much copper.

1802 a. Length, 0.159 m. Width, 0.106 m. Rivet-holes. Color indicates much copper.

PLATE CIV.

1803. Length, 0.106 m. Width, 0.0245 m. Rivet-holes with remains of rivets.

1804. From behind South Building. 0.055 m. × 0.054 m.

Discarded: seven fragments (one from behind South Building and one from West Building).

FORM 2. UNATTACHED.

1805. Fragment. Length, 0.084 m. Width, 0.063 m.

1806. Length, 0.158 m. Width, 0.125 m.

1807. Length, 0.073 m. Width, 0.03 m. On right side of smaller end, four cuts made by edged tool.

1808. Fragment. Length, 0.063 m. Width, 0.056 m.

1809. Edges broken. Length, 0.0955 m. Width, 0.017 m.

PLATE CV.

1810. From behind South Building. Fragment. Length, 0.10 m. Width, 0.03 m.

1811. Fragment. Length, 0.13 m. Width, 0.104 m.

1812. Fragment. Length, 0.114 m. Width, 0.075 m. Bent at edges.

1813. Width, 0.152 m. Height, 0.091 m.

1814. Fragment. Length, 0.0375 m. Width of sides, 0.026 m. and 0.03 m.

1815. Fragment. Length, 0.042 m.

1816. Fragment. Length, 0.065 m. Width, 0.037 m. The resemblance of this as well as of No. **1817** and No. **1818** to primitive idols (cf. *Ἐφημ. Ἀρχ.* 1898, pl. ii. No. 2) is probably quite accidental.

1817. Fragment. Length, 0.056 m. Width, 0.0125 m.

1818. Fragment. Length, 0.045 m. Width, 0.042 m.

1818 a. Fragment. Length, 0.069 m. Width, 0.055 m.

Discarded: eight fragments.

b. Ornamented.

1. ATTACHED.

1819. From south slope. Length, 0.055 m. Width, 0.052 m. Rivet-holes and dots. Nearly square, with straight edges.

1820. From south slope. Length, 0.142 m. Width, 0.07 m. Grooves round edges, and rivet-holes.

2. UNATTACHED.[1]

1821. From behind South Building. Length, 0.049 m. Width, 0.039 m. Small knob.

[1] That is, at present. They may have been attached when complete.

1822. Length, 0.095 m. Width, 0.065 m. Small knob in one corner.

1822 a. Length, 0.034 m. Width, 0.026 m. Engraved with half-circles.

1822 b. From south slope. Length, 0.035 m. Width, 0.035 m. Fine cross hatchings.

1822 c. Length, 0.05 m. Width, 0.0235 m. Three punched holes and zigzag.

c. Plated with gold.

1823. From south slope. Condition poor. Length, 0.089 m. Width, 0.075 m.[1]

d. Inscribed.

PLATES CVI., CVII.

1824. Fragment. From West Building. Height, 0.0266 m. Width (top), 0.022 m. Thickness too slight for accurate measurement. Two rows of punched letters. Irregular in size. Space between lines, 0.0015 m.–0.003 m., but between lower line and bottom edge, 0.0065 m.–0.008 m.; hence it is possible these are the last two lines of the inscription. See below, No. **1825**, and *Appendix*, p. 332.

PLATES CVI., CVII.

1825. Left edge seems to be original. Possible that upper edge is also. Corroded. Height, 0.0225 m. Width, 0.0175 m. Resembles No. **1824**. From style of letters (especially the sigma), reading from left to right would be expected, though they can be read from right to left. It would be possible to place this fragment loosely to right of No. **1824**, thus making it lower right corner of list of proper names $\begin{matrix}\text{ca}\\ \text{σομ}\end{matrix}$]ΗΗΙΦ]ΑΟΟΣ in which case one must assume the lower edge to recede from the letters so as to be 0.0045 m. from Σ and 0.008 m. from A. The alignment also is awkward. Use of Σ in retrograde period is against such reading, though the general character of the letters, etc., is the same.

PLATES CVI., CVII.

1826.[2] Edges at top and bottom smooth, and for the most part slightly beveled. Considerable portions gone from ends. Something depends on interpretation of ·Τ in first line. If it represents a paragraph, one must assume that the inscription was written on several sheets, one above the other, and that one piece is one of these sections. Condition of bronze poor. Corrosion continued after being cleaned. Besides the main piece (*a*) there are several fragments, i. e. (*b*) at the left of the fourth and fifth lines, (*c*, *d*, *e*) at the right of the sixth line. Letters punched rather deep considering thinness of plate.

Fragment *a*. Height, 0.136 m. Width (top), 0.1485 m. Thickness, 0.0003 m.–0.0005 m.

Line 1. (right to left) . . . . . *σγαh ⁝⁝ νεδα ·τ ⁝⁝ αταμθαρ* Letter on right probably a *φ*, as tail is shorter (0.0025 m.) than that of the *ρ*'s (0.0038 m.–0.005 m.). At left end of line slight trace of bevel.

Line 2 (left to right). . . . . *hεσυνχεοι ⁝⁝ τασαραs ⁝⁝ τας* . . .

Line 3 (right to left) . . . . *μαπεδαr ⁝⁝ σαιεγρασατ ⁝⁝ σαγ* Beyond the *γ* a trace of an oblique stroke, probably of Μ. To the left of the *μ* traces of letter, probably Α.

Line 4 (left to right). (. . . *κα* . . .) *ανατον ⁝⁝ hε αλλο τι καϝον ⁝⁝ h* The *κα* are on Fragment *b*. Edge at left of first *α* of main piece is slightly concave, but preserves no trace of bevel owing to corrosion.

Line 5 (right to left). *οl ⁝⁝ αιεισταμι . ε ⁝⁝ στιονχε . . π* . . . To left of the *π* traces of letter or letters. Of the possible combinations Μ (*στιονχεσπ*), Ξ|(*στιονχεξπε*), Τ|(*στιονχετιπε*) or Ϝ|(*στιονχεϝπε*) seem the most likely. To left of second *ε* are traces of upper and side stroke of Ϝ; it cannot be Β owing to *ε* preceding.[3] Last straight stroke on left is of a Τ, Υ, or Ϙ, more probably the last. To left of this on Fragment *b* is part of *ο*, the remainder of the outline being on left edge of the main fragment. Fragments *a* and *b* join at this lower edge of the *ο*. At the left, right bevel of an upright hasta.

Line 6 (left to right). *οs ⁝⁝ προ ρο οs ⁝⁝ εξπρ* Between the first two *ρ*'s, probable traces of a *π*; and between the following two *ο*'s no certain traces of a letter. Fragments *c*, *d*, *e* join the right end of line. Letters are uncertain. Word may be *εξπρ|ΝΑΙ* or *εξπρ||ΑΙ*, according to which end of Fragment *c* is considered to come at top. Fragment *e* is a small bit giving the upper end of right hasta of the *α*.

Line 7 (right to left). . . . . *ϙιοh ⁝⁝ ϙιτιογ αμμαδεμ* Between the *ο* and *γ* no certain traces of letter. At the left end of line, bevel of left hasta is continued only about halfway down, but as the bevel is perpendicular, and the line of

[1] In Museum at Eleusis is a piece of bronze plated with gold, on which is engraved a horse of geometric style.

[2] Found near terrace wall west of Second Temple about four feet below the surface, April, 1895. Rogers, *Am. Jour. of Arch.* 1901, pp. 159, 162. For commentary see *Appendix*, p. 332.

[3] But see *Appendix*

cleavage is continuous, the letter is probably *san*.

Line 8 (left to right). ς αργειας ⁝⁝ και hοιFοιε. At right of line no certain traces of letter.

Line 9 (right to left). . . . . μοδοπα ⁝⁝ σελνhιιοτ ⁝⁝ ο . . . . Edge at left end of line beveled.

Line 10 (left to right). . . . γας ⁝⁝ αργειας γα ⁝⁝ κατακ(α. Traces of last α.

Line 11 (right to left). . . . hσατιοπ ⁝⁝ οτσαοFνογ . . . .

PLATES CVI., CVII.

1827. No original edges. Height, 0.041 m. Width, 0.004 m. Letters show through on back.

H. CUT ORNAMENTS.

PLATE CV.

1828. Broken at larger end and perhaps at smaller. Length, 0.051 m. Width (in centre), 0.0295 m. Trace of hole in edge of broader end.

1829. Length, 0.046 m. Width, 0.0453 m. Small hole in centre.

1830. From south slope, 1894. Six-pointed star with loop between points. In alternate points rivets which formerly held bronze plate. Diameter, 0.048 m.

1831. Three strips of bronze; one attached at right angles to ends of others. Length of cross-bar, 0.084 m. Length of other strips, 0.10 m. and 0.086 m. (broken). Cross-bar plain, other bits have dots on edges. Small hole in centre of cross-bar.

1832. Fragment, doubtful whether of this class. Two small bits fastened together. Length, 0.03 m. Width of longer strip, 0.01 m.

PLATE CVIII.

1832 a. Fragment. Remains of nail and punched holes and dots.

I. FIGURES.

a. Cut.[1]

1833. From behind South Building. Length, 0.065 m. This object is perhaps a claw torn off a piece of drapery.[2]

1834. Condition poor. Length, 0.05 m. Along bit of original edge, row of dots. Head and neck of a bird.

1835. Bit of original edge on two sides. Length, 0.038 m. Probably bit of bird's wing or of snake. With this and No. **1836**, cf. *Olympia*, Nos. 720, 721.

1836. Fragment. Length, 0.0485 m. Ornamented with straight lines and scale pattern. Perhaps bit of bird.

1837. From behind South Building. Two fragments that fit together. Combined length, 0.094 m. Decoration of punched double circles, rectangles, and drops. Probably represents a dolphin.

b. Repoussé.

1838. From south slope. Three fragments of a left eyebrow, eyeball, lower lid, and low horn (height, 0.007 m.), which was between the eyes. Length, 0.036 m. Possibly from head of griffin. (Cf. *Olympia*, Nos. 714, 715, 715 a, and 691.)

J. UNCERTAIN OBJECTS.

1839. Shorter straight edge broken. Length, 0.028 m. Width, 0.042 m. Rivet at one corner fastening small piece to larger. Decorated with punched dots.

1840. Fragment. Length, 0.049 m. Width, 0.034 m.

1841. One edge broken. Length, 0.027 m. Width, 0.021 m. Rows of dots and two small holes in centre.

1842. Length, 0.064 m. Width, 0.048 m. Seems complete.

1843. From behind South Building. Condition poor. Two plates with toothed edges fastened together by rivets along edges. Lower plate, 0.1025 m. × 0.064 m. Upper plate, 0.106 m. × 0.063 m.

1844. Convex piece. Diameter, 0.028 m. With three engraved lines about edge. In centre, small knob of iron pierced by hole.

1845. Edge broken. Length, 0.094 m. Folded over with foot attached to fold.

1846. Ends broken. Length, 0.097 m. Two engraved lines on upright surface.

Discarded: fifty-nine small fragments of sheet bronze, of which one from West Building and one from behind South Building.

8. LEAVES.

1847. Ends broken. Length, 0.0715 m. Width, 0.044 m. Axis of leaf concave-convex. Decorated on both sides with lines and zigzag. Perhaps was cast and then hammered.

1848. Complete, but bent. Length, 0.113 m. Decorated on both sides with lines and zigzag.

[1] For cut figures from Acropolis, see Bather, *J. H. S.* XIII. p. 241.

[2] Professor Norton considers it to be the tail of a cock.

9. LEATHER GEAR.

1849. From behind South Building. Three links each made by twisting bronze wire. Total length, 0.373 m. Largest link, length, 0.145 m. Wire of first link round except at one end. In second link wire less regular, about half being rectangular, and having near centre two swellings, and toward one end engraved diagonal lines. Third link of two strands, one being rectangular. Color indicates much copper. Made by hammering probably. Object is imitation of bit of leather gear, probably of harness. (Cf. somewhat similar piece, *Olympia*, pl. v. No. 37.)

V. VESSELS

1. VASES AND CAULDRONS.

A. WITHOUT SHOULDER.

a. Plates.

1. NO DEPRESSION. ONE OR TWO HANDLES.

α. One handle.

1850. From above Upper Temple toward tents. Handle gone. Diameter, 0.059 m. Thickness, 0.0005 m. Edge with two rows of small dots close together.

β. Two handles.

1851. From south slope. Handles broken. Returning ends (ears) preserved. Diameter, 0.0595 m. In centre, boss surrounded by circle of small dots. Outside these, star pattern punched likewise from bottom. Around outer edge, two rows of dots, of which inner concave. Two rows of dots also around handles, of which the inner is concave. At left of upper handle, part of row of concave dots between inner circle and star.

2. DEPRESSED. HANDLES SMALL. RIM WIDE. SIMILAR TO PRECEDING FORM (with this Form in general cf. *Olympia*, No. 884 b. The type seems to be rare at Olympia. Cf. also small bronze patera from Tiryns, *Tiryns*, p. 170).

α. Unornamented except on rim near handle or on handle. Dot in centre.

Group i. Convex dots on either side of handle arranged horizontally.

1852. From south slope. Handles gone. Rim injured. Diameter, 0.118 m. Width of rim, 0.01 m. Near one handle, four convex dots in two groups.

Discarded: one from south slope.

Group ii. Three convex dots in triangle on either side of handle.

1853. Handles gone. Rim injured. Diameter, 0.0567 m. Width of rim, 0.007 m. Handles had pointed ears. In centre of plate, convex dot.

PLATE CIX.

1854. Condition poor. Part of one handle left. Diameter, 0.06 m. Width of rim, 0.0075 m. Ears of handles roughly pointed. Dots on rim as in No. **1853**. Single row of dots on handle. Dot in centre of plate.

Discarded: one fragment similar to No. **1854**.

β. One row of dots round outer edge of bottom struck from top.

Group i. Dots at handle same as in α, Group ii. Convex dot in centre.

1855. Condition poor. Handles and rim mainly destroyed. Diameter, 0.0445 m.

1856. Fragment. Diameter, 0.046 m. Dots as in No. **1855**.

Discards: two fragments with handles.

Group ii. One or more rows of convex dots on outer edge of rim.

1857. From back of South Building. Fragment of rim and handle. Length, 0.039 m. Opposite base of handle, inner row of dots.

1858. From back of South Building. Condition poor, about half gone. Diameter, 0.098 m.

1859. Fragment of rim and handle. Diameter, circ. 0.085 m. Row of dots on handle and ear, and five dots opposite handle and ear in groups of three and two.

γ. Around outer edge of bottom, ring of short straight lines running toward centre, struck from top.

Group i. Around outer edge of rim and on handle, single row of convex dots.

1860. From south slope. One handle gone. Diameter, 0.088 m. Width of rim, 0.007 m. In centre, rather large dot. Lines around edge approximately parallel.

Discards: small fragment with lines arranged in groups of three. The groups about 0.0035 m. apart.

Group ii. Similar to Group i., but with double row of convex dots about handle and rim.

1861. Condition poor. Diameter, 0.052 m. Width of rim, 0.0085 m. Dots rather oblong and so close as to have effect of row of lines.

Direction of lines on bottom irregular. In centre, large dot.

Group iii. Similar to Group i., but with triangle of three dots opposite each end of handle and inside dot-ring of rim. Double ring of dots around rim.

1862. From south slope. Handles broken. Diameter, 0.0725 m. Width of rim, 0.0085 m. Across ends of handle, double row. Dots of triangle are larger and probably struck after the other rows of dots, as is shown by the smaller dots appearing on the surface of the larger ones. In centre, slight depression, perhaps accidental.

1863. Condition poor. Diameter, 0.068 m. Triangles of dots same as in No. **1862**. In centre, large dot. Lines about bottom irregular.

δ. Similar to γ, but with ring of dots outside the lines on bottom. These dots struck from top.

1864. Condition poor. Diameter, 0.07 m. Width of rim, 0.008 m. Lines on bottom generally point toward centre.

ε. Similar to Class γ, but with lines crescent-shaped and parallel.

1865. Fragment. Condition poor. Row of small convex dots near outer edge of rim.

ζ. Around outer edge of bottom, row of dots, inside of which zigzag of straight lines, both dots and zigzag being struck from upper side.

Group i. Row of convex dots about handle and on ears. Triangle of three convex dots opposite ends of handles.

1866. Illustration shows under side. Condition poor. Diameter, 0.055 m. Width of rim, 0.007 m. Dots on handle, ears, and rim slightly larger than those round edge of base. Still larger convex dot in centre.

Discarded: one.

Group ii. Similar to Group i., but with row of convex dots around outer edge of rim. Dots sometimes absent from ears.

1867. From above Upper Temple toward tents. One handle mostly gone. Diameter, 0.055 m. Width of rim, 0.0055 m. Dots absent from one ear. Convex dot in centre.

1868. Illustration shows under side. From south slope. One handle gone. Diameter, 0.093 m. Width of rim, 0.01 m. Dots only on one ear. In centre, low boss, in centre of which dot. This dot struck from upper side.

Group iii. Similar to Group i., but rim has on inner edge ring of crescents (open side outward), struck from under side.

1869. From south slope. One handle, one ear of other handle, and parts of rim and bottom gone. Diameter, 0.04 m. Width of rim, 0.005 m. In centre of bottom, convex dot.

η. Around outer edge of bottom, ring of truncated ellipses opening outward. These ellipses struck from upper side.

Dots on handle, ears, and around rim. On rim opposite handles and inside ring of dots, three dots in triangle as before (*Class ζ*, Group i.). All these dots struck from under side.

1870. From south slope. Rim and bottom damaged. Diameter, 0.074 m. Width of rim, 0.0085 m. In centre of bottom, small convex dot. Punch employed for striking ellipses had broad edge (width, 0.0009 m.) with sharp corners.

θ. Around outer edge of bottom, ring of dots, inside of which, ring of semicircles or truncated ellipses opening outward. These dots and semicircles (or ellipses) struck from upper side.

Group i. Semicircles. On handle and portion of rim opposite, dots together with triangles of three dots. All these dots struck from under side.

1871. One handle gone. Rim damaged. Diameter, 0.046 m. Width of rim, 0.0045 m. In handle, hole punched from above. In bottom, convex dot.

1872. One handle gone. Rim and bottom damaged. Diameter, 0.063 m. Width of rim, 0.0085 m. In centre, hole (diameter, 0.003 m.) punched from beneath. Dots in triangles larger than those on handle and bottom.

Group ii. Truncated ellipses.[1]

(*a'*.) Dots on handle and ears. Triangle of dots on rim opposite ends of handles. All these dots struck from under side.

1873. Less than half preserved. Width of rim, 0.0065 m.

[1] This decoration is similar to that found on fragment of pottery from Melos (early Mycenaean), but there belonging to a rosette. Edgar, in *Excavations at Phylakopi*, p. 122, pl. xx. No. 12.

(*b'*.) Dots on handles and part of rim that is opposite. Besides, triangles of three dots opposite ends of handles. All these dots struck from beneath.

1874. One handle, one ear, and part of bottom gone. Diameter, 0.057 m. Width of rim, 0.004 m. In centre of bottom, dot.

(*c'*.) Row of small dots on handles and outer edge of rim. Inside this row, opposite ends of handles, triangles of three dots. Dots on ears. All these dots struck from under side.

1875. One ear and part of one handle gone. Diameter of disk, 0.112 m. Extreme diameter, 0.142 m. Width of rim, 0.0105 m. In centre of bottom, row of six oblong dots. At side of interspace between the two central dots, two small dots close together. All these dots struck from beneath. Punch did not carry outer line of ellipses as far toward open ends as it did the inner line, thus making figures look from upper side as though struck with two separate instruments.

3. Depressed. Narrow rim. No handle.

1876. Plate shows under side. From south slope. Condition poor. Diameter, 0.067 m. Width of rim, 0.003 m. On rim, ring of small dots struck from under side. Also hole in rim (diameter, 0.002 m.), punched from beneath.

4. Depressed. Wide rim. No handle. Inscribed.

Plate CX.

1877. (Photograph and copy of inscription.) Rim abraded. Much corroded and oxidized. Diameter, 0.109 m. Width of rim, 0.01 m. Thickness of bottom, perhaps about 0.001 m. Rim thinner. On under side of rim, stroke made with hollow punch (diameter, 0.002 m.), which shows on upper side as dot (lower right side of photograph). In opposite side of rim, hole (now broken out) struck with hollow punch from under side (diameter, 0.0024 m.).

For inscription, see *Appendix*.

5. Depressed. No rim. No handles. Inscribed.

Plates CX. (bottom and copy of inscription) and CXI. (top).

1878. From south slope. Edge considerably damaged. Corroded and much oxidized. Diameter of top, 0.0685 m.; of bottom, 0.06 m. Height, 0.007 m. Thickness, 0.0018 m. On outside, near bottom, narrow band with grooves at either side. Also groove 0.001 m. from top for part of circumference. Space between upper and first lower grooves occupied by inscription. (See *Appendix*.) On bottom of plate near centre, mark or scratch (*γ*). Bottom slightly convex on upper side and concave beneath. Forms sharply defined angle with sides.

b. Platters (Fragments of outer edge only).

1. Flat, i. e., edge not turned up.

α. Plain.

Plate CIX.

1879. Condition poor. Length, 0.11 m. Width, 0.08 m. Thickness, 0.0006 m. and less. Near outer edge, broad low roll. Similar but wider rise near inner edge. Inside this, possible trace of end of petal of rosette.

β. Ornamented with punched dots.

Plate CXI.

1880. Convex edge seems to be original. Condition poor. Length, 0.135 m. Width, 0.042 m. Fragment does not seem to have had other dots than those which appear in photograph. Original design not clear. Color reddish. Flexible.

Not certain that following number belongs here.

Plate CIX. (shows reverse).

1881. From back of South Building. No original edge preserved. Length, 0.026 m. Width, 0.02 m. Ornamented with large and small dots struck from upper side.

γ. Inscribed with letters of dots struck from above.

Plate CXI.

1882. Two fragments, *a* and *b*. Fragment *a* from back of South Building. Outer edge preserved. Condition poor. Length of *a*, 0.017 m.; width, 0.0315 m. Length of *b*, 0.067 m.; width, 0.031 m. Thickness of both, 0.0002 m. Flat. Photographed and drawn from concave side of dots. On same side, series of light strokes of hollow punch (see drawing), perhaps anterior to dots. They seem to be merely ornamental, but the design is not clear. For reading of dots, see *Appendix*.

Plate CXI.

1883. Fragments *a*, *b*, *c*. Fragment *b* omitted from drawings because reversed. Junction of *b* and *c* in photograph not certain. Fragment *b* broken from *a* after cleaning. Outer edge only preserved. Condition poor. Length of *a*, 0.081 m.; width, 0.047 m. Length of *b*, 0.018 m.; width, 0.005 m. Length of *c*, 0.138 m.; width, 0.041 m. Flat except for low convex ridge at

inner edge of *a*, which formed boundary between centre and border of platter.

Inscription in dotted letters punched from above, the base of the letters being toward the outside of the plate. Besides the dots of the inscription, which are heavily punched, there are fainter dots and circles (i. e. light strokes of hollow punch) with which they seem to have no relation. For these dots, see drawing on PLATE; and for inscription, see *Appendix*. Flexible. Color reddish.

2. OUTER EDGE TURNED UP, FORMING A SIDE OR RIM.

a. Ornamented with dots punched from above.

PLATE CXII.

1884. Outer edge preserved. Condition poor. Length, 0.171 m. Width, 0.0595 m. Original diameter, about 0.435 m. Height of rim, 0.006 m. Two connected semicircles of dots. At left, three large and six small dots in irregular oblique line. Color reddish. Flexible.

β. Inscribed with letters of dots punched from above.

PLATE CXI.

1885. From back of South Building. Fragment of edge with a piece of centre. Condition poor. Length, 0.11 m. Width, 0.107 m. Height of rim, 0.005 m. In edge, letter T. Height, 0.215 m. Between edge and centre, low roll, beginning at top of letter. Width, 0.012 m. Color reddish. Flexible.

PLATE CXII.

1886. Fragment of edge broken off at beginning of roll which separated edge from centre. Condition poor. Length, 0.135 m. Width, 0.047 m. Height of rim, 0.0025 m. Original diameter, about 0.45 m. Inscription in rather large dots, many of which are roughly triangular. See *Appendix*. Color reddish. Flexible.

Addenda. It is uncertain to which form the following belong.

PLATE CXI.

1887. Broken on all sides. Condition poor. Length, 0.047 m. Width, 0.0353 m. At one end, letter of heart-shaped dots punched from above. See *Appendix*.

PLATE CXI.

1888. Two fragments, *a* and *b*, which seem to belong together. Condition poor. — Fragment *a*. Broken on all sides. Length, 0.017 m. Width, 0.032 m. Five large dots forming arc of a circle perhaps from an O or a Δ. — Fragment *b*. Broken on all sides. Size, 0.0365 m. × 0.018 m. Two lines, one of two, the other of three dots, converging toward each other. Perhaps a K or an A. The order of these fragments is arbitrary.

PLATE CXII.

1889. Two fragments (*a* and *b*) which from style of letters and texture of bronze seem to come from same object. Arrangement arbitrary, being based on possibility that right end of *a* joins lower left corner of *b*, and that they thus form the projecting corner of a piece of coating. In this case the bottoms of the letters were toward the top of the object. Lower edge of Fragment *a* seems to be original, that of *b* may be. Condition poor. Length of Fragment *a*, 0.06 m.; width, 0.041 m. Length of Fragment *b*, 0.079 m.; width, 0.038 m. — Inscription in dots punched from above. See *Appendix*. On same side circles or rings struck with hollow punch independent of inscriptions, and perhaps earlier.

c. Saucers.

FORM 1. PERFORATED CENTRE. AKIN TO SIMILAR FORM OF DISK. PLAIN.

1890. Two cracks in edge due to flattening. Diameter, 0.028 m. Near centre, hole struck with solid punch from under side. Diameter, 0.002 m. Bottom rises very slightly, perhaps accidentally.

1891. Diameter, 0.0325 m. Near centre, hole (diameter, 0.0015 m.) probably struck from under side with hollow punch. About it bottom rises very slightly in irregular circle about 0.012 m. in diameter, perhaps owing to blow from punch.

FORM 2. WITHOUT PERFORATION OR BOSS. PLAIN.

Cf. shallow bronze saucer from Mycenae, outside shaft-graves, Mus. No. 2343, and Schliemann, *Tiryns*, pl. xxvii. b (terra-cotta). For use cf. sarcophagus of Crepereia Tryphaena, found, 1889, in Rome (Prati di Castello), now in Mus. dei Conservatori, containing small saucer of similar form. *Bullett. Commiss. Com.*, 1889, pp. 175, 496.

Group i. Outline, continuous flat curve. Sides, scarcely distinguishable in smaller specimens, gradually increase in prominence. No rim.

1892. About one fourth gone. Diameter, 0.034 m. Height, 0.007 m. Holes all seem due to corrosion.

1893. (Shows bottom.) Condition poor. Diameter, 0.048 m. Height, about 0.011 m. Near top, hole (diameter, 0.0022 m.) cut with hollow punch.

1894. (Shows top.) Condition poor. Diameter, 0.049 m. Height, 0.01 m. Near top, hole (diameter, 0.0017 m.) cut with hollow punch.

1895. Condition poor. Diameter, 0.075 m. Height, 0.013 m.

1896. Condition poor. Diameter, 0.08 m. Height, circ. 0.013 m. Holes all due to corrosion.

1897. Fragment, section through centre. Diameter, 0.084 m. Height, 0.0135 m.

1898. (Shows top.) Half gone. Diameter, 0.105 m. Height, 0.02 m.

Discarded: three.

Not certain whether the following had hole in bottom, as centre is not preserved.

1899. (Shows top.) Diameter, 0.027 m. Height, 0.005 m. Near top, hole (diameter, 0.0025 m.) struck from inside with hollow punch.

Group ii. Similar to Group i., but with sides more clearly marked and rims somewhat thicker.

1900. Top. From West Building. Half gone. Diameter, 0.084 m. Height, 0.02 m.

1901. (Shows top.) From back of South Building. Less than half preserved. Diameter, 0.0975 m. Height, 0.023 m. Bottom very thin, but sides thicken to 0.0018 m. On outside near top, three fine encircling lines close together. Between lowest and middle lines a fourth line runs part way round. [On PLATE wrongly numbered **1981**.]

Group iii. Rounded cup-like bottom. Rim but slightly emphasized.

1902. Nearly half gone. Diameter, 0.0235 m. Height, 0.008 m.

1903. Shows top. From back of South Building. About one third gone. Diameter, 0.0386 m. Height, 0.014 m. Near centre, hole punched roughly from above with solid rectangular punch. Size, 0.003 m. × 0.005 m.

Group iv. Nearly flat bottom, from which sides are plainly differentiated, but by rounded angle. Rims not emphasized.

1904. Shows top. From south slope. About one third gone. Diameter, 0.079 m. Height, 0.019 m.

Group v. Similar, but with rim more emphasized.

1905. Shows top. From back of South Building. Condition poor. Diameter, 0.0595 m. × 0.054 m. Height, 0.01 m.

Group vi. Similar to Group v., but heavier, without emphasis of rim, and with a more rounded curve between side and bottom.

PLATE CXIII.

1906. Shows top. From back of South Building. Nearly half gone. Diameter, 0.053 m. Height, 0.0075 m.

Group vii. Similar in shape to Group i., but with side bent back at top to form rim.

1907. (Shows top.) Fragment, broken in two parts (*a* and *b*). Height, 0.013 m. Roll at top about 0.0015 m. in width.

FORM 3. WITH BOSS. SHAPE SIMILAR TO FORM 2, Group i.

Class a. Plain.

Group i. Small round hole near edge.

1908. (Shows top.) Diameter, 0.023 m. × 0.0257 m. Height, 0.0038 m. Near edge, hole (diameter, 0.0017 m.) cut with hollow punch. Diameter of boss, 0.006 m.

1909. From south slope. Diameter, 0.0314 m. Height, 0.003 m. Near top, hole (diameter, 0.002 m. × 0.0028 m.) struck with hollow punch from inside. Diameter of boss, 0.007 m.

1910. Diameter, 0.032 m. Height, 0.002 m. Near edge of top, hole (diameter, 0.002 m.) as in No. **1909**. Diameter of boss, 0.0075 m.

1911. From back of South Building. Condition poor. Diameter, 0.0355 m. Near edge, hole (diameter, 0.0015 m.). Diameter of boss, 0.008 m.

1912. From south slope. Condition poor. Diameter, 0.039 m. Height, 0.0038 m. Near edge, hole (diameter, 0.0013 m.) as in No. **1909**. Diameter of boss, 0.008 m.

1913. Condition poor. Diameter, 0.04 m. Height, 0.0043 m. Near edge, hole (diameter, 0.0018 m.) as in No. **1909**. Diameter of boss, 0.0047 m.

1914. (Shows top.) Condition poor. Diameter, 0.041 m. Near edge, hole (diameter, 0.0019 m.) as in No. **1909**. Diameter of boss, 0.01 m.

1915. One fifth gone. Diameter, 0.0455 m. Height, 0.0045 m. Near edge, hole (diameter, 0.002 m.) as in No. **1909**. Diameter of boss, 0.0065 m.

1916. (Shows top.) Diameter, 0.054 m. Height, 0.0056 m. Near edge, hole (diameter,

0.0017 m.) cut with hollow punch. Diameter of boss, 0.009 m.

1917. Condition poor. Diameter, 0.064 m. Height, 0.0175 m. Near top, hole (diameter, 0.002 m.) as in No. **1909**. Diameter of boss, 0.0105 m.

1918. Condition poor. Diameter, 0.65 m. × 0.07 m. Near edge, hole (diameter, 0.0018 m.) as in No. **1909**. Diameter of boss, 0.013 m.

1919. Condition poor. Diameter, 0.085 m. Height, 0.015 m. Near edge, hole (diameter, 0.002 m.) uncertain whether cut or corroded. Diameter of boss, 0.015 m.

1920. Diameter, 0.09 m. Near edge, hole (diameter, 0.0015 m.) as in No. **1909**. Diameter of boss, 0.014 m.

1921. (Top.) Half gone. Diameter, 0.123 m. Near edge, hole (diameter, 0.002 m.) as in No. **1909**. Diameter of boss, 0.037 m.

Discarded: three.

Group ii. No hole.

1922. From West Building. Diameter, 0.0375 m. × 0.043 m. Diameter of boss, 0.0045 m.

1923. (Shows top.) From south slope. Condition poor. Diameter, 0.073 m. Diameter of boss, 0.012 m.

The following number may be of either i. or ii.

1924. Half gone. Diameter, 0.010+ m. Diameter of boss, 0.026 m.

Discarded: four, of which one from south slope.

Class β. Ornamented with dots, or lines, or lines and dots in various patterns.

All the completed rims have small round perforation. Incomplete specimens without perforation are arranged with them. In the same way are included a few fragments which do not contain portions of centre, inasmuch as all the complete examples with similar ornamentation have boss.

Group i. Row of dots about boss.

1924 a. (Shows top.) About one fourth gone. Much oxidized. Diameter, 0.0285 m. Height, 0.003 m. Diameter of boss, 0.005 m. Near edge, dot.

Group ii. Lines from boss to edge.

The examples under this Group are nearly flat and resemble disks.

(*a'*.) Lines struck from upper side.

1925. (Shows top.) Diameter, 0.035 m. Height, 0.0034 m. Diameter of boss, 0.0085 m. Near edge, nearly rectangular hole (0.0015 m. square) struck from inside.

(*b'*.) Lines struck from under side.

1926. (Shows bottom.) About one third gone. Diameter, 0.056 m. Diameter of boss, 0.0165 m.

Group iii. Similar to Group ii., (*b'*); but with row of small dots about edge struck from inside, and similar row about outer edge of top of boss struck from beneath.

1927. (Shows bottom.) Fragment. Radius about 0.03 m. Diameter of boss, 0.019 m.

Group iv. Bottom has straight lines radiating from, but not entering boss, struck from inside.

1928. (Shows top.) About one fourth gone. Diameter, 0.026 m. Height, 0.0021 m. Diameter of boss, 0.0073 m.

1929. (Shows top.) Diameter, 0.029 m. Height, 0.0035 m. Diameter of boss, 0.0065 m. Near edge, hole (diameter 0.0017 m.) struck from inside with hollow punch.

1930. Diameter, 0.0345 m. Height, 0.0048 m. Diameter of boss, 0.008 m. Near edge, hole (diameter, 0.0013) struck from inside.

1931. (Shows top.) Diameter, 0.035 m. Height, 0.0045 m. Diameter of boss, 0.0073 m. Near edge, hole (diameter, 0.0013) as in No. **1929**.

Group v. Similar to Group iv., but with one or more rings of dots punched from above encircling the rays.

(*a'*.) One ring at end of rays.

1932. Nearly half gone. Diameter, 0.0283 m. Height, 0.003 m. Diameter of boss, 0.007 m. Near edge, hole (diameter, 0.0018 m.) as in No. **1929**.

1933. (Shows top.) From south slope. Condition poor. Diameter, 0.039 m. Height, 0.0035 m. Diameter of boss, 0.0075 m. Near edge, hole (diameter, 0.002 m.) as in No. **1929**.

(*b'*.) Two rings at end of rays.

1934. Condition poor. Diameter, 0.045 m. × 0.05 m. Height, 0.0073 m. Diameter of boss, 0.0075 m.

1935. (Shows bottom.) From south slope. Condition poor. Diameter, 0.051 m. Diameter of boss, 0.0115 m. Near edge, hole (diameter, 0.0018 m.) as in No. **1929**.

(*c'*.) Similar to (*b'*), but with a second double ring just inside edge.

1936. (Shows top.) Diameter, 0.081 m. Diameter of boss, 0.0205 m. Near edge, hole (diameter, 0.0014 m.) as in No. **1929**.

Group vi. From boss extend fine parallel curved lines close together, struck from above. Beyond lines but close to them, ring of dots struck from beneath. Outside this ring and close to it, straight rays struck from above. Beyond rays, ring of small dots struck from above.

1937. (Shows top.) Nearly half gone. Diameter, 0.0645 m. Height, 0.0085 m. Diameter of boss, 0.0135 m. Near edge, hole (diameter, 0.0023 m.) struck from inside.

Group vii. Near boss, one or two rings of small dots, followed by star pattern consisting of zigzag of straight lines.

(*a'*.) Ornaments struck from above.

1938. (Shows top.) Diameter, 0.024 m. Height, 0.003 m. Diameter of boss, 0.007 m. Near edge, hole (diameter, 0.0019 m.) as in No. **1929**. Single ring of dots.

1939. (Shows bottom.) Edge damaged. Diameter, 0.0523 m. Height, 0.006 m. Diameter of boss, 0.009 m. Outside first ring of dots, a second of small faint dots.

(*b'*.) Ornaments struck from beneath.

1940. Fragment. Diameter of boss, 0.125 m. About boss, ring of dots so placed that usually the inner angle of zigzag starts from a dot.

Group viii. Rays about boss, followed by one or two rings of dots. Beyond dots, zigzag or star pattern. Dots and zigzag may be repeated. All dots and lines struck from upper side.

(*a'*.) Between rays and zigzag a single row of dots.

1941. (Shows top.) Condition poor. Diameter, 0.069 m. Height, 0.0065 m. Diameter of boss, 0.0135 m. Near edge, hole (diameter, 0.0013 m.) as in No. **1929**.

Discarded: one.

(*b'*.) Between rays and zigzag, double row of dots.

1942. From south slope. Condition poor. Diameter of boss, 0.012 m. Near edge, hole (diameter, 0.0015 m.) as in No. **1929**.

1943. Diameter, 0.084 m. Diameter of boss, 0.022 m.

1944. (Shows top.) Condition poor. Diameter, 0.099 m. × 0.075 m.

1945. (Shows top.) From south slope. Diameter, 0.091 m. × 0.106 m. Diameter of boss, 0.019 m. Near edge, hole (diameter, 0.0025 m.) as in **1929**.

(*c'*.) Similar to (*b'*), but with an added double row of dots and a zigzag.

1946. (Shows bottom.) From West Building. Fragment. Height, 0.014 m. Diameter of boss, 0.0245 m.

Group ix. Next to boss, circle of short rays. Remainder of space between these and edge occupied by two rings of large dots inclosing zigzag. All dots and lines struck from above.

1947. From back of South Building. Condition poor. Diameter, 0.064 m. Height, 0.006 m. Diameter of boss, 0.007 m. Though somewhat flattened, probably better placed here than among the disks.

Group x. Boss followed by rosette. Ornaments struck from above.

(*a'*.) No dots.

1948. (Shows top.) From back of South Building. Condition poor. Diameter, 0.033 m. Height, 0.0034 m. Diameter of boss, 0.0057 m. Near edge, hole (diameter, 0.0018 m.) as in No. **1729**.

1949. About one fifth gone. Diameter, 0.039 m. Height, 0.0027 m. Near edge, hole (diameter, 0.002 m.) cut with hollow punch.

(*b'*.) Ends of rays connected by semicircles of fine dots struck from above, forming rosette.

1950. (Shows top.) From back of South Building. Condition poor. Diameter, 0.075 m. Height, 0.0077 m. Diameter of boss, 0.017 m. Near edge, hole (diameter, 0.0015 m.) as in No. **1929**.

Group xi. Similar to Group x., but with large dots struck from above, one in end of each leaf of rosette.

(*a'*.) Corresponds to Group x. (*b'*).

PLATE CXIV.

1951. (Shows top.) About one third gone. Diameter, 0.0433 m. Height, 0.0051 m. Diameter of boss, 0.0075 m. Near, edge, hole (diameter, 0.001 m.) struck from upper side.

(*b'*.) Corresponds to Group x. (*a'*), with addition of ring of connected crescents opening outward, between rosette and edge.

1952. Small segment extending from edge not quite to boss. Diameter of dots, 0.0055 m. and 0.006 m.

Group xii. Combinations of rosette with other forms. All ornament struck from above.

(a'.) Rays, double ring of dots, and leaf pattern.

1953. (Shows bottom.) From back of South Building. Condition poor. Diameter, 0.08 m. Diameter of boss, 0.0175 m. Many rays slightly curved. Near edge, hole (diameter, 0.001 m.) as in No. **1929**. This piece has been so flattened that it could be taken for a disk.

(b'.) Rays, single ring of dots, and leaf pattern of double lines.

1954. (Shows top.) Condition poor. Diameter, 0.043 m. Diameter of boss, 0.0084 m. Leaves not connected with each other, but stamped or engraved separately. Near edge, hole (diameter, 0.0015 m.) as in No. **1929**.

(c'.) Outer part has zigzag, single row of dots, and leaf pattern with dot in end of leaves, all reckoned from inside toward edge. Ends of leaves double, i. e. plain and dotted lines. Uncertain whether there were rays.

1955. (Shows top.) Fragments a and b. Fragment a, length, 0.088 m.; width, 0.027 m.; height, 0.0063 m. Fragment b, length, 0.04 m.; width, 0.021 m. Dots and leaf pattern only preserved. Both fragments probably from same object.

Group xiii. Rays, dots, and semicircles. Semicircles open inward. Ornaments struck from above.

1956. (Shows top.) About one fourth gone. Diameter, 0.103 m. Height, 0.014 m. Diameter of boss, 0.024 m. Near edge, hole (diameter, 0.004 m.) as in No. **1929**.

Group xiv. Similar to Group xiii., but with row of dots and a zigzag added outside. Dots on boss. All decorations from above.

1957. (Shows top.) Condition poor. Diameter, 0.067 m. Height, 0.0107 m. Diameter of boss, 0.0166 m. Near edge, hole (diameter, 0.002 m.) as in No. **1929**.

Group xv. Triple ring of zigzag forming diamond pattern followed by leaf pattern. Decoration struck from above.

1958. (Shows top.) About half gone, and much flattened. Diameter, 0.091 m. Near edge, hole (diameter, 0.001 m.) as in No. **1929**.

Group xvi. Leaf pattern, straight lines and dots in successive zones reckoned from boss. Followed by row of petals with open end outward. Between lower rounded ends of petals a dot. All decoration struck or engraved from under side.

1959. Segment from boss to edge. Leaf pattern has closed end outward. Double lines used in common on sides. Probably ends were double. Related to following FORM 4.

Addendum to FORM 3.

1960. Small fragment containing portion of side and bottom, but no original edge. Row of curved parallel lines close together, followed by double row of dots.

FORM 4. SIMILAR TO FORM 3, BUT WITH CRIMPED EDGE. ORNAMENTED.

Group i. Rays about boss. Struck from above.

1961. (Shows top.) Condition poor. Diameter, 0.039 m. Height, 0.0085 m. Diameter of boss, 0.008 m. Near edge, hole (diameter, 0.002 m.) as in No. **1929**.

Discarded: one.

Group ii. Similar to Group i., but with one or two rows of dots outside rays. Struck from above.

(a'.) One row of dots.

1962. From above Upper Temple toward tents. Nearly half gone. Diameter, 0.037 m. Height, 0.0115 m. Diameter of boss, 0.009 m.

1963. (Shows top.) Fragment. Flattened. Diameter of boss, 0.008 m.

Discarded: two.

(b'.) Two rows of dots.

1964. Half gone. Diameter, 0.038 m. Height, 0.0088 m. Diameter of boss, 0.0075 m.

1965. (Shows top.) From back of South Building. Broken in two pieces and defective. Diameter, 0.05 m. Diameter of boss, 0.0085 m. Near edge (of smaller fragment), hole (diameter, 0.0015 m.) as in No. **1929**.

Group iii. Similar to Group ii., but with outer part of bottom divided into segments by straight lines. All lines and dots struck from above.

1966. (Shows top.) From back of South Building. Diameter, 0.034 m. Height, 0.004 m. Diameter of boss, 0.0068 m. Near edge, hole (diameter, 0.001 m.) as in No. **1929**.

Group iv. Similar to Group iii., but with ring of zigzag outside ring of dots and lines from points of zigzag to edge of bottom. All lines and dots struck from above.

1967. Defective and in poor condition. Diameter, 0.086 m. Diameter of boss, 0.023 m. Lines to edge of bottom from alternate points of zigzag only.

1968. (Shows top.) About one fourth gone. Condition poor. Diameter, 0.06 m. Diameter of boss, 0.007 m. Outer angles of zigzag accentuated by dots. Lines to edge of bottom from each angle of zigzag. These lines do not stand in relation to crimps of edge.

Group v. Similar to Group ii. (a'), but with second ring of rays, the outer ends of which connect with the angles of a zigzag, thus forming a sort of angular leaf pattern.[1] All ornamentation struck from top.

1969. (Shows bottom.) About one fifth gone. Flattened. Diameter, 0.068 m. Diameter of boss, 0.0135 m. Angles of zigzag independent of crimps, though sometimes coincident with them.

Group vi. About midway between boss and edge of bottom, ring of crescents opening outward, struck from above.

1970. (Shows top.) From back of South Building. Condition poor. Diameter, 0.054 m. Height, 0.0115 m. Diameter of boss, 0.0105 m.

Group vii. After leaf pattern or rosette with rounded petals, ring of adjoining crescents, opening outward. From ends of crescents straight lines to edge of bottom, generally coinciding with inner convexity of crimps. Decoration of centre not preserved, but probably rosette came directly after boss.

1971. Fragment. Height, 0.007 m.

Group viii. Boss followed successively by one ring each of small dots, short lines, and connected crescents opening outward. From joinings of crescents, straight lines extending nearly to edge and corresponding to inner convexity of crimps. The entire surface thus appears to be divided into segments, although only the crimps are plastically indicated. All lines and dots struck from above.

1972. (Shows top.) Condition poor. Diameter, 0.075 m. Height, 0.0195 m. Diameter of boss, 0.013 m. Lines struck before crimping of edge. Near edge, hole (diameter, 0.0025 m.) as in No. **1929**.

Group ix. Crimping and section lines as in Group viii. Inside lines, small zigzag followed by a plain line and a ring of small dots. Succeeding decoration not preserved.

1973. From back of South Building. Small fragment. One crimp and one line preserved. Crimp made after line.

Discards: Groups i.–vii., two, of which one from back of South Building. Group viii. or ix., one from same place.

Addendum. The following fragment, if complete, would probably be best regarded as of a separate form.

1974. From back of South Building.

Discarded: one, uncertain whether of FORM 3 or 4.

FORM 5. BOSS. MORE ADVANCED. SIDES, BOTTOM, AND RIM DIFFERENTIATED. DECORATION APPLIED FROM OUTSIDE.

1975. (Photograph shows bottom, drawing shows segment of side and bottom as a single surface.) Incomplete. Condition poor. Diameter, 0.132 m. Height, 0.027 m. Decoration. Two rings about boss, then ring of double crescents forming base of long loops, which are the main ornament. Beneath rim, two fields separated by heavy lines. Lower field filled with hatched diamond pattern, the upper with raised dots or beads. Just beneath lower field, a similar line of beads (omitted in drawing). Traces of boundary line beneath. Sides ornamented with system of v's with returning ends, each v having another interlacing with it on each side. Crescents form bottom of loops, but sometimes upper line connects with one side and the lower with the other, sometimes both serve as bottom for both sides, and sometimes lower line seems to be real bottom of loop. At top between angles, heavy arrowheads are inserted, thus making continuous zigzag.

With this and the following number cf. *Olympia*, No. 880.

PLATE CXV.

1976. (Photograph shows bottom; segment as in No. **1975**.) Incomplete. Condition poor. Diameter, 0.16 m. Height, 0.0355 m. Diameter of boss, 0.034 m. Decoration like that of No. **1975**, but clearer and better preserved. Zigzag at top of loops struck separately and quite freely. Top of zigzag often open (drawing inaccurate). The lower of the two fields near top filled with circles. Slight traces of circles in upper field (omitted in

[1] Effect of lines and zigzag similar to that of upper part of decoration of gold cup from second shaft-grave at Mycenae (=Schliemann, v), Schliemann, *Mycenae*, p. 292, fig. 453.

drawing). Heavy lines and thin material of side and bottom give plastic effect.

PLATE CXIV.

1977. (Shows top.) From above Upper Temple toward tents. Fragment. Condition poor. Decoration similar to that of Nos. **1975** f.

Discarded: six fragments, of which one from back of South Building.

Similar to preceding.

1978. About two thirds of rim preserved. Broken into two parts. Diameter, about 0.172 m. Three fields at top. Upper and lower fields have circles, the middle field diamond hatching.

Discards of **Type c**: thirty-two fragments, of which twelve are from back of South Building, two from south slope, one from West Building, and one from "near wall southeast of house."

Addendum. The following object, which has an edge like a plate, the depth of a saucer, and a convex bottom like a low boss, may be put here.

1979. (Shows top.) From south slope. Fragment. Condition poor. Radius, about 0.034 m. Width of rim, 0.006 m.–0.0075 m. Bottom ornamented with short straight lines extending from outer edge toward centre and struck from under side.

d. Bowls.

FORM 1. TOP LIKE THAT OF SAUCERS.

Class α. Without handles.

Under this class are included all vases, and fragments of rims, which do not have traces of handles on them, the evidence of the complete examples being, in a majority of the cases, against the assumption that there were handles on the missing portions.

Group i. Plain.

PLATE CXV.

1980. Defective. Diameter, 0.105 m. Height, 0.031 m. Rests on slight base ring (diameter, 0.055 m.; height, 0.0016 m.; thickness, 0.001 m.). Bottom slightly convex on inside. No boss. Outer edge of bottom indicated by fine circle on inside. Around outside near top, a single line. Could be regarded as a saucer owing to slight depth.

1981. About two thirds of rim preserved, with a scrap of side and possibly of bottom. Condition poor. Present diameter, 0.018 m.

1982. From south slope. Rim with portion of side put together from seven fragments. Rim lacks 0.025 m. of completeness. Diameter, 0.151 m. × 0.145 m. Near top, hole (diameter, 0.0025 m.). Two other small holes diagonally beneath, but probably not original.

PLATE CXVI.

1983. Bottom and part of sides gone. Diameter as now bent, 0.215 m. × 0.09 m.

1984. Circle of rim nearly complete. Broken in two pieces (*a*, *b*).

The following less complete rims may be put here, although some of them were perhaps saucers.

PLATE CXV.

1985. (Fragments *a*, *b*.) Two other fragments, *c*, *d*, which do not fit the others, but from appearance belong to same rim. Length of *a*, *b*, 0.108 m.; of *c*+*d*, 0.044 m. On outside of fragment *a* is engraved an ⊟. For copy see *Appendix*.

1986. From back of South Building. Fragments *a*, *b*, and *c*, *d*. Chord, 0.159 m.

1987. Fragments *a*–*d*. Diameter, about 0.13 m.

1988. Fragments *a*, *b*. Chord, 0.137 m.

Discarded: eighteen fragments of rims, of which four from back of South Building, three from south slope, and one from West Building. Possible that some of them are from saucers.

The following fragment may be included here as most likely coming from a large bowl.

1989. Fragment of rim. Condition poor. Length, 0.045 m. Bold outside bevel. Possible traces of one or two lines just below bevel.

Group ii. Ornamented.

The following numbers (**1990**–**2000**) may possibly be from saucers.

1990. (Drawing of left end.) Found below wall at southeast of Second Temple, April 25, 1893. Rim of which less than half is preserved. Condition poor. Chord, 0.153 m. Cf. No. **1975**. Top too heavily shaded in drawing.

1991. Fragment of rim. Chord, 0.103 m.

PLATE CXVI.

1992. (Drawing of portion.) From back of South Building. Fragments *a* and *b*. Fragment *a*, length, 0.094 m.; fragment *b*, length, 0.06 m.

1993. Fragment of rim. Condition poor. Length, 0.067 m. Top heavy, with bevel on inside and two rolls on outside.

1994. (Drawing of portion.) Rim of which less than half is preserved. Chord, 0.183 m. On lip, at right end, inscription with bottoms of letters toward inside. See *Appendix*, p. 337.

1995. From south slope. Fragment of rim. Length, 0.043 m. Circles dotted.

1996. From south slope. Fragment of rim. Length, 0.057 m. Decoration uncertain owing to bad preservation. Perhaps only one field and that filled with circles or hatching or both.

1997. Fragments *a*–*f*. Fragment *f* from south slope. Original diameter, about 0.142 m. Traces of ornament on sides like that of preceding numbers, but no certain traces of bands at top.

1998. Fragment of rim. Length, 0.054 m. No bevel (that which looks so in drawing is oxidation.) On outside, at 0.0017 m. from top, possible traces of single engraved line.

1999. (Drawing of middle part.) From back of South Building. Fragment of rim. Diameter (nearly complete), 0.0123 m. Top has bevel, slight on inside and prominent on outside.

2000. Fragment of rim. Original diameter, about 0.215 m. Top has on outside moulded bevel followed by heavy grooves. Beneath, leaf pattern, below which possible trace of scale pattern. Farther down, single line.

Discarded: six fragments similar to the above.

The following fragments of rims are more certainly from bowls.

2001. Original diameter, about 0.102 m. At top, bevel inside and outside. Three bands at top, with no certain trace of ornament on them.

2002. Fragments *a* and *b*. Length, 0.093 m. Top has bevel on outside. Beneath, two raised bands.

PLATE CXVII.

2003. Length, 0.281 m. Top has bevel on outside. Beneath, leaf pattern, above and below which bands.

2004. Length, 0.0565 m. Top has heavy bevel on outside. At 0.0015 m., 0.0062 m., 0.0082 m., and 0.0092 m. from bevel, single plain grooves.

Discarded: one similar to No. **2004**.

2005. Length, 0.189 m. Original diameter, probably about 0.55 m. Width of rim, 0.016 m. ornament as in PLATE. Leaves of palmette and central leaves of lotus terminate in a series of adjoining double circles usually open on sides toward centre of field. At base of lotus leaves, two of these double circles put together with open sides facing in opposite directions. In the small portion left beneath lowest band, semicircles (uncertain how nearly complete originally), between which arrowhead termination of ornament.

For ornament cf. Holwerda, *Jahrb.* V. p. 240. Cf. also *Jahrb.* VI. *Anz.* p. 125, No. 12 e.

Addendum. Fragment of side of inlaid bowl.

2006. No original edge preserved. Inside pentagonal space (only three sides preserved) depressed to about half the thickness of the bowl, probably for inlaying.

Class β. With handles.

Group i. Plain.

2007. Found back of South Building in 1894. Handles and bottom gone. Diameter, 0.088 m. On one side, near top, two holes 0.0325 m. apart for rivets of handle. On opposite side rivets are preserved. One of them holds small fragment of handle.

2008. Fragment of rim of large bowl. Length, 0.105 m. Projecting top with bevel beneath. Near top, holes for handle (diameter, 0.008 m., distance apart, 0.0365 m.).

Group ii. Ornamented.

2009. Fragment of rim. Length, 0.03 m. At one end near top, small hole (broken out). Decorated with three narrow double bands.

FORM 2. CONTRACTED TOP.

Class α. Without rim.

2010. Fragment of top. Original diameter at top, about 0.085 m.

2011. From south slope. Fragment of top. Original diameter, about 0.087 m.

The following fragment is perhaps from a vessel of similar shape.

2012. No original edge preserved. Length, 0.04 m.

Class β. With rims projecting on outside.

Classification of following fragments somewhat uncertain, owing to their small size.

Group i. Plain.

2013. Length, 0.036 m.

2014. Fragments *a*, *b*, *c*. From rim of large vessel. Length, 0.013 m. Top formed by rolling upper edge outward.

Group ii. Ornamented.

2015. Length, 0.0355 m. No curve. Top as in No. **2014**. Broad zigzag.

2016. Length, 0.022 m. Rim solid. Broad zigzag with four grooves beneath.

FORM 3. TOP SOMEWHAT CONTRACTED AND DIFFERENTIATED FROM BODY AS A SORT OF NECK.

2017. From back of South Building. Length, 0.055 m. Side crimped from 0.0175 m. from top. Just above crimps, ring of connected crescents.

2018. (Fragments *a*, *b*, and *h*.) Fragments *a–i*. Length of *a* and *b*, 0.075 m. Seems to have bulged sharply outward at beginning of crimps, and then to have passed to bottom by a fairly straight slope.

In Bernardini tomb (Museo Kircheriano), four large shallow bowls with crimped sides. No boss in bottom.

e. Suspension vase.

2019. Found at east end of steps, south slope, April 24, 1893. In side not photographed, hole corroded through (0.025 m. × 0.016 m.). Condition poor. Diameter, 0.0395 m. Height, 0.0525 m. Thickness, 0.0008 m. and less. Rests on standard 0.0154 m. in height. Lower part of standard rounded. Vase cast as one piece.

Possible that traces of wire for suspension existed before cleaning. Similar bronze vase from Aegina in Nat. Mus., Athens.

B. WITH SHOULDER (UNCERTAIN WHETHER ORIGINALLY WITH NECK).

2020. Top broken out around edges. Small hole in bottom. Condition poor. Diameter, 0.043 m. Height, 0.0295 m. Diameter of present opening at top, 0.026 m. Bottom distinguished from sides (height, 0.0012 m.; diameter, 0.025 m.).

2021. Top and bottom gone. Condition bad. Diameter, 0.059 m. Height as preserved, 0.03 m. Side showing in PLATE, probably the top.

C. WITH SHOULDER AND NECK.

a. Pitcher.

2022. Bottom broken off, and centre of it missing. Diameter, 0.041 m. Height, 0.061. Diameter of top, 0.0235 m.; of opening, 0.0115 m.; of bottom, 0.0214 m. Surface of top slants slightly toward opening. Handle riveted at bottom and probably at top. Upper part has form of serpent's head with jaw resting on rim. Eyes seem to have been indicated.

For shape and style cf. bronze pitcher from Mycenae (outside of shaft-graves), Mus. No. 2767.

b. Jars.

FORM 1. SHORT. VERTICAL OR NEARLY VERTICAL NECK.

Class α. Plain.

Arranged with reference to development of rim.

2023. From back of South Building. Fragments of top (*a*, *b*). Length, 0.026 m. Flares slightly outward, but has no rim.

2024. From back of South Building. Fragments of top broken in two pieces (*a*, *b*). Length, 0.09 m. Diameter was about 0.138 m. at top. Slight flare, but no rim. At right end of fragment *b*, near top, small hole now broken out.

2025. From back of South Building. Fragment of top. Length, 0.0815 m. Thickens and flares at top.

2026. Fragment of neck. Length, 0.045 m. Rim formed by outward roll of top (width, 0.009 m.). Height of neck, 0.009 m.

2027. From south slope. Fragment of top with beginning of shoulder. Length, 0.10 m. Original diameter at top, about 0.157 m. Rim formed as in No. **2026**. Width, 0.003 m.

2028. Fragments *a*, *c*, and *f* are from back of South Building. Several fragments of top (*a–f*). Diameter, 0.15 m. Rim flat (width, 0.005 m.). Fragments *c* and *d* preserve beginning of shoulder.

2029. Fragments of top (*a*, *b*) with beginning of shoulder. Diameter (nearly complete), 0.09 m. Rim flat. Width, 0.006 m.

Class β. Ornamented.

PLATE CXVIII.

2030. Fragment of neck. Length, 0.043 m. Top flares. Near top four fine parallel encircling lines. Placed here because of similarity in style to following number.

2031. Fragments of neck (*a–c*, not certain that *b* and *c* join) with beginning of shoulder. Diameter, 0.089 m. Flares at top and bottom. Width of rim, 0.004 m. Beneath rim, four lines as in No. **2030**.

2032. (In centre beneath plaster, piece inserted as support while photographing.) Fragments of neck, *a–d*. Flares at top (width of rim, 0.004 m.). Beneath, three lines as in No. **2030**.

2033. From south slope. Two fragments of rim with handles attached and beginning of shoulder. Diameter, 0.088 m. Height of neck, 0.0215 m. Rim flat on top (width, 0.0045 m.). Passes to neck by slight bevel, at base of which four lines as in No. **2030**. Handles flat and plain on inside. On outside, raised edges and centre, which are cut down near rim. From point of junction with rim ends flatten and curve about neck. Width at end, 0.039 m. This end fastened with rivets, of which heads on inside are larger than those on outside, probably for ornament. Lower end of handles joined vase, but there is no trace of any fastening.

2034. One handle gone. Surface injured by corrosion. Diameter, 0.055 m. Height, 0.079 m. Rim flat on top (width, 0.0033 m.). Passes to neck by plain bevel, beneath which two lines as in No. **2030**. Bottom concave on under side. At top of leaf pattern (left side in PLATE) about body, hole (diameter, 0.0015 m.). Handle fastened at upper end by two rivets, one on each side. Shafts of corresponding rivets preserved in opposite side of neck. Rivet-heads not ornamental, but slightly larger and more prominent on inside. Lower end of handle not riveted. Ends in palmette. On top of handle, resting on very low basis, sphinx, looking toward inside. Cast solid with handle. Height, 0.021 m. Lower part of legs solid and unornamented. No tail. Wings double and alike in decoration. Short, thick neck. Rather heavy face, with eyes nearly circular, full rounded chin, and small mouth. Hair represented as a mass distinguished plastically from forehead and cheeks, but no details are given except a single line near front. On left side of neck three short cross lines, which may indicate that hair came down side of neck; on the right side it is carried down in the modeling.[1]

FORM 2. UPPER PART OF NECK FLARES TOWARD TOP AND ABOUT CORRESPONDS IN LENGTH TO NECKS OF PRECEDING FORM.

2035. Found on south slope stairs, middle, April 24, 1895. Handles with small piece of rim attached. Diameter of top, 0.086 m.; of bottom of preserved part, 0.066 m. Heavy, solid handles, inside plain. On outside, raised edges and centre which are separated from concave fields by single grooves. On sides of handles, similar groove running down centre. Upper side cut away near rim as in No. **2033**. End of handle grips rim of vase, and then spreads about neck beneath ledge. Fastened by rivets at upper end. Head of rivets larger on inside. Uncertain how lower end was fastened. No signs of attachment. Shape of remainder of neck uncertain, but it seems to have widened rapidly.

FORM 3. NECK CLOSES INWARD FROM SHOULDER.

2036. From south slope. Fragment of neck. Length, 0.08 m. Width of rim, 0.009 m. Flare at bottom probably beginning of shoulder.

Addenda to Vases. (*a′*.) The following fragment is perhaps top of neck of rimless jar.

2037. From south slope. Condition poor. Bent. Diameter, 0.082 m. × 0.055 m. About top, narrow leaf pattern. Leaves indented. Groove above, below, and across lower end.

(*b′*.) The following pieces have bottom or bottom and sides backed by lead.

Without shoulder or neck (low basin).

2038. Fragments *a–f*. Uncleaned. Fragment *a*. About two thirds of circle of bottom and side. Condition poor. Bent. Diameter at present about 0.30 m. About side and edge of bottom, inserted lead strip. Thickness, 0.01 m. to 0.04 m. Lead covered inside and out with sheet bronze, but changed in shape through being melted. No indication that sides rose higher than at present. On under side, two pieces belonging to bottom attached by rivets. Fragments *b–f* are of lead except for small pieces of bronze attached to *b*, *c*, and *d*. Fragments *c* and *d* join. Contour of edge of bottom preserved by *c* and *e* (PLATE shows under side of *e*). It was depressed and surrounded by deep groove.

With shoulder and neck (cauldron).

PLATE CXIX.

2039. From West Building. Besides fragments *a–h*, which show in PLATE, twelve small bits of bronze. All except *a* and *b* may belong either to this number or to No. **2038**. Fragment *a*. Part of side and bottom. Length, 0.36 m. All bronze except for piece of backing about edge of bottom. Bottom attached to side by rivets. Was possibly, though not probably, double. Side piece was joined to its continuation at one end by rivets. Fragment *b*. About half of rim with piece of side. Diameter of rim, 0.222 m. Height of rim, 0.021 m. Rim double, with upper edge bent outward. Not certain where pieces join, but probably in shoulder. Fragment *c*. Two pieces of bronze riveted together. Fragments *d–h* have rectangular holes made with solid punch. Large round holes in fragment *g* cut with hollow punch from opposite side to that from which rectangular hole was struck.

(*c′*.) Unclassified bottoms (mainly bosses).

[1] For general design cf. *Olympia*, No. 671, ascribed by Furtwängler to sixth century. Its form is simpler and less developed than that of Heraeum specimen. Cf. also for shape small clay amphora from Mycenae (outside of shaft-graves), No. 1111.

2040. Top mostly gone, and condition poor. Boss. Diameter, 0.048 m.

2041. Fragment of boss. Diameter, 0.05 m.

2042. From south slope. Two fragments which do not belong to same boss. Right-hand fragment discarded.

2043. From south slope. Diameter of boss, 0.033 m.

2044. Diameter of boss, 0.022 m.

2045. From back of South Building. Fragment with part of boss. Dimensions, 0.057 m. × 0.049 m. Beginning of boss indicated by groove on under side. Outside, ring of small dots. Inside (1) ring of short straight lines pointing toward centre, (2) ring of small dots.

2046. (Shows upper side.) Diameter of boss, 0.03 m.

2047. (Shows under side.) Diameter of boss, 0.041 m. Hole in ornament, 0.0065 m. in diameter, filled with iron.

Discards: ten bosses, of which one from back of South Building and three from south slope. Unclassified fragments of vases, 252, of which 115 from back of South Building, one from south slope, and one from West Building.

D. HANDLES OF VASES AND CAULDRONS.

DIVSION I. HORIZONTAL. DIRECT ATTACHMENT.

Type a. Rounded bar.

FORM 1. BROAD.

Class α. Riveted.

2048. From south slope. Width, 0.047 m. Projected, 0.03 m. One foot has part of bronze rivet, the other has rivet and small piece from side of vase adhering.

Class β. Stuck.

(*a'*.) Plain.

2049. Width, 0.0393 m. Projected, 0.0245 m.

(*b'*.) Ornamented.

2050. Width, 0.0397 m. Projected, 0.0265 m. In centre of bar, bead with grooved ring at either side. At each end of bar transition to foot by ring.

FORM 2. NARROWER. STUCK. UNORNAMENTED.

Group i. Rounded feet.

2051. One side defective. Projected, 0.041 m. from vase.

2052. From south slope. Width, 0.033 m. Projected, 0.037 m.

Group ii. Long feet.

2053. One foot about half gone. Projected, 0.0335 m.

FORM 3. LARGE. ROUNDED FOOT. HORIZONTAL PLANES. FEET STUCK.

2054. Part of one leg left. Projected, 0.046 m. Transition ring between leg and foot. Foot somewhat concave. Small round hole near centre, probably a flaw.

FORM 4. LARGE. FLOWER AT CENTRE OF BAR. FEET STUCK.

2055. Fragment of one leg. Projected, about 0.07 m. Cast in one piece.

Cf. *Olympia*, No. 911, for complete example of this handle.

Type b. Flat bar. Projects in horizontal plane. Feet stuck.

2056. One foot gone. Width, 0.103 m. Projected, 0.036 m. Foot concave in long axis as though attached to rim. Leaf pattern. Small circles at joinings of tops of leaves.

Similar, but more elaborate, De Ridder, *Bronzes de l'Acropole*, No. 210.

PLATE CXX.

2057. Both feet broken and defective. Projected, 0.0505 m. Feet concave in long axis.[1]

Type c. Rectangular bar with rounded corners. Feet probably stuck.

2058. One foot gone, the other damaged and bent. Width, 0.055 m. Projected, 0.05 m.

Type d. Rectangular bar with broader side upright.

2059. From back of South Building. Condition poor. Width, about 0.095 m. Projected, about 0.03 m.

2060. Condition poor. Width, 0.08 m. Projected, 0.061 m. Feet must have held nearly rectangular edge.

Discarded: one.

Type e. Rounded polygonal and triangular bar with legs bent upward. Feet stuck.

With this type cf. handles of broken bowls from Mycenae, e.g. Mus. No. 2368.

FORM 1. TRIANGULAR BAR.

Under side somewhat more convex than the others, and usually somewhat wider.

Class α. Legs bent.

2061. (Shows under side.) Width, 0.0955 m. Surface of feet flattened on one side for attachment.

2062. (Shows under side.) Width, 0.0585 m. Foot has slightly concave surface for attachment.

Class β. Nearly horizontal.

2063. Width, 0.065 m. Surface of foot has slit lengthwise for attachment.

[1] Identified by Miss M. Louise Nichols.

2064. (Shows upper side.) Width, 0.058 m. Oblong shallow holes in both feet.

2065. From back of South Building. Width, 0.076 m. Oblong holes in feet.

Cf. *Olympia*, No. 926 (no holes in feet).

FORM 2. TOP AND BOTTOM OF BAR ALMOST FLAT, SIDES CONVEX AND WIDER. ATTACHED TO SURFACE WITH SHARP SLANT.

2066. (Shows upper side.) From back of South Building. Width, 0.06 m.

FORM 3. ROUNDED BAR, IN PART ELLIPTICAL. BROADER SIDE IN HORIZONTAL PLANE. ATTACHED TO SURFACES WITH SHARP SLANT.

2067. (Shows upper side.) Width, 0.066 m. Knobs at side undercut.

2068. Width, 0.075 m. Conical, undercut knobs.

Type f. Bar broad and flat.

2069. Small fragment. Length, 0.036 m. Thickness, 0.0018 m. Back flat, bevels only on one side. Regarded as fragment of handle (rather than of a wheel) after analogy of following number.

2070. Broken at both ends. Length, 0.091 m. Thickness, 0.002 m.

Type g. Bar has returning ends.

2071. (Drawing of half.) From south slope. Width, 0.224 m. Thickness, about 0.0035 m. Holes for nostrils.

Cf. De Ridder, *Bronzes de l'Acropole*, No. 212.

Addenda. The following fragments seem to be from handles of shape somewhat similar to No. **2071**.

2071 a. Condition poor. Length, 0.038 m. Two small holes for rivets. Object could be attached decorative serpent's head.

2071 b. Length, 0.125 m. Rivet for attachment, 0.004 m. in diameter. Head on inside of vessel, diameter, 0.007 m. Returning end ornamented with narrow convex surface in cut at 0.0185 m. from tip.

Discarded: two.

DIVISION II. HORIZONTAL. INDIRECT ATTACHMENT.

Type a. Attachment by external rivet.

FORM 1. FOOT TURNS OUTWARD.

2072. One foot gone. Present width, 0.03 m.

FORM 2. FOOT TURNS INWARD.

2073. One foot uncoiled, twisted, and broken off. Condition poor. Width, 0.0535 m. Through left foot passes rivet with small piece of metal attached to each end. Between upper piece and bar, another slightly thicker piece.

Type b. Attachment by eyelet.

FORM 1. BAR CURVES OUTWARD AT FOOT. PLATE CXXI.

2074. From above last part of Stoa under Cyclopean wall. Bar broken at both ends. In each case, broken out hole through which rivet passed which held it to side of vase. Length of bar, 0.054 m. Width on flat side, 0.007 m. Right eyelet (in PLATE) formed by meeting of two semicircular prongs.

Cf. *Olympia*, No. 664, with shorter returning ends. Similar piece with different purpose from Argos specimen from temple of Athena Cranaea near Elateia (*B. C. H.* XII. p. 55 [P. Paris]).

2075. From back of South Building. Both ends broken. Length, 0.0375 m.

2076. From back of South Building. One leg preserved. Length, 0.064 m.

2076 a. One end gone. Height, 0.022 m. Knob at end.

2077. Bar for attachment. Cf. No. **2074**. Length, 0.051 m. Thickness, 0.006 m. Inner diameter of eyelets, 0.004 m. and 0.0045 m. Right rivet projects at back 0.001 m., the other less.

Addenda to FORM 1. The following numbers are perhaps only bent pieces of wire.

2078. Length, 0.05 m.

For curve of end cf. *Olympia*, No. 864.

2078 a. From back of South Building. Height, 0.037 m. Perhaps better regarded as a spit end.

2078 b. Uncleaned. One end gone. Rectangular bar with ordinary angular knob in centre of bow. Height, 0.037 m.

Discards of FORM 1: ten (of which six uncleaned).

FORM 2. BAR CURVES INWARD AT FOOT.

2079. From south slope. One foot gone. Width, 0.033 m. Cf. No. **2073**.

Addendum to FORM 2. It is not certain that the following number is a handle.

2080. Bent. Height, 0.054 m.

FORM 3. BAR A SIMPLE RING (CLOSED OR OPEN).

Class α. Eyelet passes through object and is bent back on inside. (Perhaps only ornamental attached rings, but formally best put here.)

2081. Condition poor. Diameter of ring, 0.0132 m.

2082. Attached piece damaged, but perhaps

has upper edge original. Diameter of ring, 0.0165 m. Ends of eyelet bent back flat on inside and in opposite directions. Attached piece a sort of ear, which was itself probably attached to side of vase.

Cf. ornaments of eyelet and ring on elliptical bronze cist in Museo Gregoriano, No. 327, *Mus. Greg.* I. pl. 87.

2083. Ring and part of eyelet. Diameter, 0.0225 m. Ring open and ends meet in eyelet.

2084. From back of South Building. One side of eyelet strap gone. Diameter, 0.0264 m.

2085. Eyelet gone, but ring has narrow depression where it passed. Diameter, 0.035 m. Bar somewhat flat.

2086. Seems to be complete, although only one end of strap passed through object. Ring rather flat (section would be pear-shaped). Diameter, 0.0198 m.

Discarded: one.

Class β. Eyelet welded to plate which was riveted to object.

2087. Diameter of ring, 0.046 m. Thickness of plate, 0.0015 m.–0.003 m. Eyelet cast separately. Diameter, 0.0165 m. Above, two rivets.

Type c. Feet turn in and pivot in ends of attached socket-piece.

Not all cases which fall formally under this type are true pivots. The feet often meet in the socket-piece, thus agreeing essentially with **Type b**. It seems best to put them all together, partly because of the formal connection and partly because it is difficult in many cases to ascertain whether there is a true pivot or not.

Form 1. Rounded bow.

Class a. Bar tapers to end of feet without indication of point where they become pivots.

Group i. High bow. Bow plain.

(*a'*.) Handles from which socket-piece is lost.

2088. Width, 0.0177 m. Height, 0.0165 m.

2089. Width, 0.023 m. Height, 0.014 m.

2090. Width, 0.0233 m. Height, 0.017 m.

2091. Width, 0.024 m. Height, 0.0227 m.

2092. Width, 0.026 m. Height, 0.023 m.

2093. Width, 0.0266 m. Height, 0.0225 m.

2094. Width, 0.0267 m. Height, 0.021 m.

2095. Width, 0.027 m. Height, 0.024 m.

2096. Width, 0.027 m. Height, 0.025 m.

2097. Width, 0.0275 m. Height, 0.0245 m.

2098. Width, 0.028 m. Height, 0.0262 m.

2099. Width, 0.0284 m. Height, 0.0255 m.

2100. From south slope. Width, 0.0287 m. Height, 0.0215 m.

2101. Width, 0.0287 m. Height, 0.024 m.

2102. Width, 0.029 m. Height, 0.0245 m.

2103. From West Building. Width, 0.029 m. Height, 0.026 m.

2104. Width, 0.0293 m. Height, 0.0245 m.

2105. From south slope. Width, 0.03 m. Height, 0.0253 m.

2106. Width, 0.032 m. Height, 0.027 m.

2107. From back of South Building. Width, 0.0323 m. Height, 0.03 m.

2108. Points blunted. Width, 0.0332 m. Height, 0.0245 m.

2109. From West Building. One point broken. Width, 0.0357 m. Height, 0.027 m.

2110. Points blunted. Width, 0.0365 m. Height, 0.027 m.

2111. From back of South Building. Points blunted. Width, 0.0414 m. Height, 0.0317 m.

2112. Points broken. Width, 0.0414 m. Height, 0.0368 m.

2113. From south slope. Width, 0.0424 m. Height, 0.0337 m.

2114. Width, 0.051 m. Height, 0.043 m.

2115. Points damaged. Width, 0.122 m. Height, 0.095 m.

In the following numbers (**2116**–**2118**) the opening is at one end of flat side.

2116. Width, 0.021 m. Height, 0.0215 m. Ends overlap slightly.

2117. Uncertain whether ends are broken. Width, 0.0233 m. Height, 0.02 m.

2118. Both ends probably broken. Bent. Width, 0.0563 m. Not certainly a handle, but shape of bow hardly accidental.

Addenda. It is not certain whether the following numbers (**2119**–**2122**) are handles.

2119. Width, 0.0233 m. Height, 0.0275 m. Bar rectangular at end. Ends overlap at centre of under side.

2120. Width, 0.032 m. Height, 0.0295 m. Ends meet.

2121. Ends broken. Width, 0.025 m. Height, 0.022 m.

2122. Ends broken. Bent. Width, 0.053 m. Height, 0.0355 m.

Besides the above, there are a number of open rings which have on the side where the ends meet a flattened or pulled-out appearance, suggesting a possible use as handles.

2123. Width, 0.019 m. Height, 0.0215 m. Ends overlap.

2124. Points injured. Width, 0.0199 m. Height, 0.0185 m.

2125. Ends damaged. Width, 0.021 m. Height, 0.0235 m. Section of bar would be a flattened ellipse.

2126. Width, 0.0217 m. Height, 0.023 m.

2127. From West Building. Width, 0.0239 m. Height, 0.0233 m.

2128. Width, 0.0247 m. Height, 0.0237 m. Ends overlap slightly.

2129. Width, 0.0253 m. Height, 0.0265 m. overlap.

2130. Ends injured. Width, 0.031 m. Height, 0.0335 m.

Discards of (*a'*): twenty-seven, of which two from back of South Building and one from south slope.

(*b'*.) Handles with socket-piece preserved.

(1'.) Socket-piece plain.

2131. Socket-piece partly broken out, but did not meet originally. Width, 0.0205 m. Height, 0.0243 m. Length of socket-piece, 0.0067 m.

2132. From back of South Building. Defective and in poor condition. Width, 0.022 m. Height, 0.026 m. Socket-piece open. Length, 0.0075 m.

2133. From West Building. Width, 0.032 m. Height, 0.0275 m. Socket-piece open. Length, 0.012 m. Interior filled with lead.

2134. Condition poor. 0.0323 m. Height, 0.032 m. Socket-piece open. Length, 0.0135 m.

2135. From south slope. Width, 0.0407 m. Height, 0.033 m. Socket-piece open. Length, 0.016 m. Interior filled with lead. Socket-piece turns still.

(2'.) Socket-piece ornamented with grooves.

2136. From West Building. Socket-piece damaged at one end. Width, 0.0188 m. Height, 0.018 m. Socket-piece open and sides overlap. Length, 0.009 m.

2137. Part of ring gone. Condition poor. Width, 0.021 m. Height, 0.0167 m. Length of socket-piece, 0.01 m. One side slightly flattened. Ornamented with about five grooves which in best preserved part look like screw-thread.

2138. Width, 0.023 m. Height, 0.02 m. Length of socket-piece, 0.0115 m.

2139. Width, 0.026 m. Height, 0.022 m. Length of socket-piece, 0.01 m. Turns.

2140. From back of South Building. Width, 0.0275 m. Height, 0.025 m. Length of socket-piece, 0.016 m. Ends of ring, 0.0015 m. apart, visible at opening between ends of socket-piece.

2141. Width, 0.0435 m. Height, 0.0405 m. Socket-piece open. Length, 0.0155 m.

2142. From West Building. Width, 0.06 m. Height, 0.046 m. Socket-piece flattened on attached side to surface of 0.007 m. in width. Length, 0.035 m.

Cf. *Olympia*, No. 843, and for use, *ibid.* No. 845 (sketch). Also *Burlington Fine Arts Club, Exhibition of Ancient Greek Art* (1904), A 8 (pl. xlv.).

Discarded: one (under 2').

Group ii. High ornamented bow. Only one example and that doubtful.

2143. Defective and in poor condition. Width, 0.0388 m. Height, 0.0275 m. At centre of bow, bead with ring at either side (all one piece with bow). Section of bar would be octagonal.

Group iii. Bow flattened. Plain.

(*a'*.) Socket-piece lost.

2144. Width, 0.034 m. Height, 0.019 m.

2145. Width, 0.0345 m. Height, 0.0215 m.

2146. From West Building. Condition poor. Width, 0.0365 m. Height, 0.019 m.

2147. Width, 0.0365 m. Height, 0.0205 m.

2148. Height, 0.021 m. Width, 0.037 m.

2149. Condition poor. Width, 0.038 m. Height, 0.019 m.

2150. Width, 0.038 m. Height, 0.025 m.

2151. Width, 0.042 m. Height, 0.023 m.

2152. From south slope. Condition poor. Width, 0.04 m. Height, 0.023 m.

2153. Width, 0.0455 m. Height, 0.027 m.

2154. From south slope. Width, 0.0455 m. Height, 0.0235 m.

2155. Width, 0.051 m. Height, 0.0215 m.

2156. Width, 0.0575 m. Height, 0.0265 m.

The following have opening at end of pivot side.

2157. Part of bottom gone. Width, 0.035 m. Height, 0.026 m.

2158. Width, 0.0379 m. Height, 0.0196 m.

2159. Width, 0.044 m. Height, 0.0275 m.

The following has ends meeting at centre and overlapping.

2160. Ends damaged. Width, 0.0373 m. Height, 0.025 m.

Addendum. The following object has shape of handle of this group, but is perhaps better regarded as end of bladed spit.

2161. Width, 0.052 m. Height, 0.024 m.

Discards of (*a'*): twenty-one cleaned, mostly fragments, one being from south slope, one from West Building, and two from back of same building; also four uncleaned fragments.

(*b'*.) Socket-piece preserved. Socket-piece ornamented.

PLATE CXXII.

2162. Condition poor. Width, 0.03 m. Height, 0.018 m. Socket-piece flattened on one side.

2163. Width, 0.0345 m. Height, 0.021 m.

2164. From West Building. Width, 0.0385 m. Height, 0.028 m. Shallow holes in socket-piece in which ends of ring play freely.

Discarded: one.

Group iv. Flattened bow. Bow ornamented.

(*a'*.) Ornament in centre of bow.

2165. Width, 0.048 m. Height, 0.035 m.

2166. From south slope. Width, 0.04 m.

Cf. *Olympia*, No. 836.

2167. Ring defective. Width, 0.033 m. Height, 0.02 m.

2168. From West Building. Width, 0.0765 m. Height, 0.046 m.

Discards of (*a'*): three uncleaned and uncertain fragments.

(*b'*.) Ornament at ends of bow.

2169. Width, 0.0375 m. Height, 0.025 m.

2170. Width, 0.094 m. Height, 0.054 m. Bar octagonal in section, with four broader sides connected by four that are narrower. Socket-piece has groove on top extending nearly to centre. Bottom and side of groove of bronze.

For style of ring part, cf. *Olympia*, No. 829.

Class β. Pivots separated from remainder of bar by beads.

Group i. High bow.

2171. Width, 0.0395 m. Height, 0.033 m.

2172. Found probably northeast corner near east end of Stoa and near or under Cyclopean wall. Width, 0.048 m. Next to pivots, bead with narrow ring at either side.

Group ii. Flattened bow.

2173. About half gone. Height, 0.0355 m.

2174. Condition poor. Width, 0.062 m. Uncertain whether pivots are inserted or cast with object. Probably the former.

Cf. *Olympia*, No. 835.

Discard: one uncleaned, similar to No. **2174**.

FORM 2. RECTANGULAR BOW.

(*a'*.) Plain.

2175. Ends broken. Width, 0.10 m. Incompleteness renders classification uncertain. Could be put with *Olympia*, No. 662 (horizontal, riveted flat ends).

(*b'*.) Ornamented.

2176. From back of South Building. Ends broken. Width, 0.046 m. Bar rectangular, with sharp corners.

2177. Condition poor. Width, 0.141 m. Height, 0.064 m. Bar octagonal.

Cf. *Olympia*, Nos. 825, 827, especially the latter.

Type d. Similar to Type c, but the socket-piece is attached to the body of the ring, forming a sort of eyelet. It is not, however, a true eyelet any more than it is a true socket-piece, and hence is best put apart from Types b and c.

2178. Socket-piece much damaged. Height of ring, 0.026 m. Original length of socket-piece, about 0.011 m. Probably plain.

2179. Condition poor. Width of ring, 0.0335 m. Possible traces of ornamental grooves on socket-piece.

Addenda to Types c and d. Socket-pieces and applied ornaments of same form. (For another use, viz. on tripod standards, cf. *Olympia*, p. 128, No. 814.)

(*a'*.) Socket-pieces (holes for pivots in ends).

2180. Length, 0.018 m. Diameter, 0.0125 m. Interior lead. Plain.

The following numbers (**2181–2185**) have ornamental grooves.

2181. From West Building. Length, 0.011 m. Diameter, 0.0068 m. × 0.005 m. Interior lead.

2182. From West Building. Condition poor. Length, 0.0164 m. Diameter, 0.007 m. × 0.006 m. Interior filled with lead, in each end of which small hole.

2183. From West Building. Length, 0.033 m. Diameter, 0.0135 m. Interior filled with lead, in each end of which hole.

2184. Length, 0.0315 m. Diameter, 0.01 m. One side flattened to surface of 0.005 m.

2185. Length, 0.0305 m. Diameter, 0.0113 m. Flattened on one side to 0.007 m.

It is not certain that the following number belongs here.

2186. Thin sheet rolled so that ends meet. Length, 0.029 m.

Discards of (*a'*): five (uncleaned).

(*b'*.) Applied ornaments of same or similar form.

2187. Length, 0.0505 m. On one side shallow groove, 0.004 m.–0.006 m. wide, running lengthwise. Ends smooth and slightly convex.

According to Furtwängler, *Olympia*, p. 135, groove indicates attachment to a rim.

The following are slightly different.

2188. From West Building. Length, 0.039 m. Slightly curved. Cf. No. **2788**, with which this should be classed.

2189. From West Building. Length, 0.025 m. Diameter, 0.0075 m. Round. Solid.

The following is of uncertain use.

2190. Ends probably incomplete. Length, 0.029 m. Diameter, 0.012 m. Slightly curved. One side slightly flattened.

Discards of (*b'*): two (uncleaned).

DIVISION III. VERTICAL.

Type a. Top of handle about on level with top of vase.

2191. Ends broken. Height, 0.043 m. Width, 0.013 m. Convex bands at side ornamented with zigzag of bent lines.

2192. Upper part damaged. Height, 0.038 m. Ornament of arrowhead hatching in centre, and of hatched transverse lines on adjoining rolls.

2193. Upper end gone. Height, 0.045 m. Width, 0.025 m. On side ridges, oblique hatching, at edges of fields, dots. Central ridge has two lines at top, but elsewhere nothing certain.

2194. Height, 0.042 m. Width, 0.02 m. Ornament of vertical grooves.

For ornament cf. *Olympia*, No. 656.

Type b. Top of handle rises above vase.

Class α. Rather heavy flat bar with or without ridges at side.

2195. Top damaged. Condition poor. Height, 0.051 m. Width, 0.012 m. Vertical grooves.

2196. Condition poor. Height, 0.05 m. Width, 0.016 m. Ornament of vertical grooves.

2197. From back of South Building. Damaged at upper end, lower end gone. Height, 0.071 m. Width, 0.016 m. Grooves.

PLATE CXXIII.

2198. Top damaged. Height, about 0.07 m. Width, 0.032 m. Guilloche of double grooves at outer edge of each field.

Not certain that following number belongs here.

PLATE CXXII.

2199. From south slope. Ends damaged, uncertain just how much. Condition poor. Height, 0.038 m. Width, 0.0127 m. Near top, rivet. Slightly concave, otherwise no certain traces of ornament.

Class β. Bar convex on outside.

PLATE CXXIII.

2200. Ends damaged. Condition poor. Height, 0.086. Width, 0.012 m. Both ends worked off from upper side for attachment. No certain trace of ornament.

Class γ. Heavy convex triangular bar. Ornamented with figure in relief.

2201. Upper part damaged at place of attachment. Condition poor. Height, 0.051 m. Lower end indented on outside, doubtful whether originally. Inside of lower end concave. No marks of attachment. Upper end has deep groove for attachment to rim. Beneath groove, two rivet-holes (one now broken out). Above broken-out hole, a rivet. Above attachment, lion's head in low relief facing toward vase. Treatment sketchy and decorative. Nose low and broad, with nostrils indicated. Almond-shaped eyes in hollow sockets. Mouth indicated by two parallel grooves close together. Small ears. No certain indication of mane. Contour of handle but slightly altered.

Type c. Top attached to upper surface of top of vase.

2202. Height, 0.104 m. Width, 0.0235 m. In centre of top, hole cut from above (diameter, 0.01 m.). Ornament of arrowheads, in some places close enough together to be called a zigzag. At beginning of top, three large dots, punched from beneath, at right angles to axis of handle.

The following object of uncertain use is put here owing to similarity of form.

2203. Upper end broken. Condition poor. Length, 0.0575 m. Has tail and beginning of head. The sort of gill showing on lower side of head in PLATE does not appear on the other side. Tail has no surface for attachment. Object seems to be a handle in form of serpent (or fish), but roughly executed.

Discards of vertical handles: four, of which two are from south slope.

Addenda to Handles (D). (*a'*.) Attachment pieces for hoop or string handles.

2204. Width, 0.08 m. Lion's head rounded on top. From it rises ring, cast solid with remainder of object, with hole 0.006 m. in diameter. Treatment of head decorative. Small ears (only right preserved). Eyes given by small, round, rather deep (about 0.005 m.) holes, in

long, shallow, almond-shaped sockets. Nostrils indicated. Mouth rendered by groove. For style, see III. 5, b (above, p. 203).

For heads of similar use, cf. *Olympia*, Nos. 789 f.

2205. One ear gone. Condition poor. Width, 0.82 m. Griffin's head. Sides probably represent wings. Vessel to which object was attached was large and slightly narrowed at top. Details of head sketchy. Ear a rounded blade with dull point. Horn about 0.003 m. in height. Beak curved and thin. Between ears, indentation which seems too slight for place of eyelet. No other place of attachment for handle. Perhaps merely ornamental.

Cf. *Olympia*, No. 791.

(*b'*.) Not clear whether following two numbers were intended chiefly as handles or as ornaments.

2206. Length, 0.081 m. Ends concave on under side for attachment to rounded surface.

2207. Length, 0.0615 m. Same on both sides, except that one side is more concave, and hence was probably the under side. In end of projection, deep lengthwise groove, 0.004 m. in width. Nails pass clear through and have heads at back.

E. CONNECTING RODS BETWEEN BOWL AND BASE.

2208. Condition poor. Height, 0.044 m. Top has thin oxidized piece of metal on both sides. In foot, hole (diameter, 0.001 m.).

2209. One end bent. Length, 0.111 m. Octagonal bar. For shape, cf. *Olympia*, Nos. 672 f.

2210. One end gone. Length, 0.091 m. Attached metal was thin, as is shown by slight projection of rivet.

2211. Bar broken or rather cut sharply off. Length, 0.068 m.

It is less certain that the following belong here.

2212. From West Building. Shaft broken. End of foot gone. Condition poor. Height, 0.0425 m. Width of shaft, 0.008 m. Large rivet in foot. Attached piece was thin.

2213. Shaft broken. Length, 0.056 m. Small hole in each foot. Possible trace of engraved zigzag on bar.

2214. From West Building. Shaft probably broken at top. Condition poor. Length, 0.0875 m. No rivet in foot.

F. ORNAMENTS OF VASES.

2215. Bar broken. Condition poor. Length, 0.142 m. Shaft was not extended on other side of vertical bar. Near top of latter, a single engraved line. Attached to top of large vase. Projected slightly above rim.

Cf. vase from Vulci (Polledrara tomb) in British Museum, and *Olympia*, No. 852.

2216. From wall east of house of guard. Shaft broken at both ends. Rivet-hole near centre of vertical bar. In use and attachment similar to No. **2215**.

It is not certain that following number is from a vase.

2217 (= **383**). From West Building. Ends of the four projecting arms broken. Length, 0.34 m. Vertical bar attached by a rivet to back piece. Back piece slightly wider than bar. From back piece project horizontal arms which do not seem to be of one piece with it. Bead ornament on arm.

2. TRIPODS AND STANDARDS.

A. FRAGMENTS OF LARGE TRIPODS.

(*a'*.) Legs.

PLATE CXXIV.

2218. Lower end. Length, 0.181 m. Width, 0.035 m.–0.046 m. Thickness, 0.029 m.–0.0375 m. Consists of thick three-sided shell, the inside of which is nearly filled with bronze. At back, filling projects slightly and has hole in it. Bottom a separate piece of irregular height (back, 0.0025 m.–0.015 m.; front, 0.018 m.–0.029 m.). Made of same material but more rudely. Welded to upper part. Ornamental grooves continued roughly on front, but not on sides.

For style cf. *Olympia*, No. 565 (Furtwängler's first class). *Ibid.* No. 622, is, however, more akin to Heraeum piece than No. 565.

PLATE CXXIII.

2219. Top of leg of small tripod with shallow bowl. Length, 0.08 m. Width, 0.03 m.–0.048 m. Cast in one piece. Concave surface on back for attachment of bowl, which was held by three bronze nails in top of leg (piece of one still in hole). Width of sides of leg, 0.0085 m. and 0.01 m. Decoration like that on front. From back, at edge of break, pin projects upward at angle of about 40° to support surface for bowl. Length, 0.027 m. Diameter, 0.0075 m.

This surface has vertical hole (diameter, 0.0175 m.) which continues the open space between the side bars of leg. Depth of part of bowl clasped by leg, 0.058 m. Greatest diameter of bowl was at about 0.023 m. from top of leg.

Style and fabric similar to *Olympia*, No. 622. Cf. also fragment from Zeus cave on Mt. Ida, *Athen. Mitth.* X. p. 59, *Beilage*, No. 5 (Fabricius) = Halbherr and Orsi, *Antichità dell' antro di Zeus Ideo*, col. 54.

2220. Top of leg of large tripod. Small strip of upper edge seems to preserve original surface. Height, 0.077 m. Width, 0.057 m.–0.1025 m. Thickness, 0.007 m. At centre of top, broken nail-hole; in upper right corner, another; in left corner, possible traces of two others. On outside of each edge of front, four parallel vertical ribs. Sides smoothly beveled.

For decoration cf. *Olympia*, No. 562.

PLATE CXXIV.

2221. Broken at both ends. Length, 0.33 m. Width, 0.61 m. Width of sides, 0.037 m. Space between sides half filled with melted bronze, apparently for strengthening. This filling holds in place at upper end the central part of a bronze supporting pin, both ends of which are broken off short. The upper stub projects upward at a sharp angle, the lower is curved only slightly upward. Diameter of pin, 0.01 m. On middle of pin two pieces of bronze which may be remains of further fastenings, or (more likely) mere drops of metal. At both ends, between sides, remains of fine drab-colored earth, perhaps from casting. Ornament of front, double arrowhead pattern in centre with zigzag border at sides. At top, cross inside zigzag ring, above and below which, zigzag frame. Ornament of sides similar, so far as preserved, except that the vertical zigzag along edges is lacking.

Cf. *Olympia*, No. 627.

(*b'*.) Handles.

PLATE CXXIII.

2222. Fragment of large handle. Length, 0.101 m. Width, 0.037 m. Thickness, inner edge, 0.013 m., outer edge, 0.0065 m. Ribbed on both sides.

Cf. *Olympia*, Nos. 624 f.

The following are uncertain, but probably belong here.

PLATE CXXIV.

2223. (Shows convex side.) Perhaps fragment of outer rim of large handle. Length, 0.111 m. Width, 0.0285 m. Thickness of outer rim, 0.007 m., of teeth, 0.005 m. Outer edge preserves original surface, the inner is broken. A bar similar to the outer edge of No. **2224** came next. Probable that No. **2224** was the piece. One side slightly convex, the other concave. If this is original, the piece can hardly have been a tripod-handle. Ornament substantially alike on both sides.

2224. (Shows concave side.) Fragment similar to No. **2223**, but broken on all sides. Length, 0.113 m. Width, 0.027 m. Bent in same manner as preceding number, although not quite the same curve throughout. If they belong together, they were bent while together and again after the separation.

With Nos. **2223** f. cf. *Olympia*, Nos. 636 and 639. Convexity possibly due to imitation of curve of earlier handles such as *Olympia*, No. 569.

B. LOW TRIPOD-STANDARDS.

Type a. Block feet.

2225. From south slope. Ring cracked through. Diameter (outside), 0.08 m. × 0.076 m. Width, 0.007 m. Thickness, 0.006 m. Upper surface roughly grooved as though for attachment of some object or objects. Roughness probably due to portions of bronze soldering still adhering. Feet project outward. Length of feet, 0.013 m. Have form of cylindrical blocks except on inside. Height of standard with feet, 0.012 m.

Among uncleaned scraps from Acropolis (National Museum, Athens), numerous ring standards with cylindrical and spool feet.

Type b. Spool feet.

2226. From Old Temple. Length, 0.022 m. Diameter of ends, 0.0225 m. and 0.024 m. Single foot. On one side, smooth edges where foot was applied, but no trace of fastening. May possibly have been part of handle.

Cf. *Olympia*, No. 860, attached to triangular plate, also Carapanos, *Dodone*, pl. xlvii. No. 2.

In the Carapanos collection (from Dodona), half of ring with two spools attached as feet, welded or cast together; also similar spool as part of handle. Mosaic in Capitoline Mus. (Rome) with bowl which rests on spool feet. Helbig, *Führer*, I. No. 450.

Type c. Lion's feet.

Class a. Plain.

2227. From back of South Building. Only a

single leg with small portion of ring above preserved. Height, 0.027 m. Under side of foot hollow.

Class β. Edge of ring notched.

2228. Leg and piece of ring. Height, 0.048 m. Length (straight), 0.113 m. Width, 0.021 m. Foot has six toes, the outer toe on each side being in flat relief. Rests on thin base, which may be a separate piece. Roughly cast.

Cf. *Olympia*, No. 853.

Class γ. Engraved.

2229. Leg. Upper edge broken. Height, 0.032 m. Width, 0.02 m. Rounded projections or ears on each side at top, forming transition to ring. Between ears and leg, double line. Four toes. Bottom of foot solid and flat.

PLATE CXXV.

2230. Found east of Northwest Building, 1895. Leg and part of ring. Height, 0.076 m. Length (straight), 0.138 m. Width of ring, 0.019 m. Thickness, 0.0015 m.–0.006 m., increasing toward front. Height of front, 0.025 m. On front, leaf pattern, the lower part of which is formed by semicircular punch-marks. Leg set slightly back of outer edge of ring. Convex at back. Molding at top with simple volute at either side. Five toes, one of which is very faintly indicated. The others are sharply and carefully modeled, showing joints and claws. Under side of foot hollowed out.

C. FEET OF STANDARDS.

It is uncertain what the following feet supported.

2231. Condition poor. Height, 0.064 m. Length, 0.135 m. Upper surface, 0.042 m. × 0.0225 m. In top, two holes (diameter, 0.006 m.) passing entirely through. Filled with iron — the remains of rods or rivets. Feet rest on bases which are not of same piece with upper part. Thickness, 0.004 m. and 0.005 m. Feet do not stand flatly, the object being bent so that only inner edges touch the ground. Four toes, the lines of which continue upward, forming parallel ridges. On each side continuous line of engraving down leg to sole. By means of it an additional toe is indicated on each side.

2232. Bases gone. Condition poor. Height, 0.056 m. Length, 0.108 m. Two holes through top. In centre of each foot, a bronze rivet which held base. Four toes. Claws indicated. Rested squarely on feet. Limits of feet indicated by concave band across instep. No engraving, entire decoration being cast.

2233. Soles gone. Condition poor. Height, 0.061 m. Length, 0.1165 m. Two holes through top, now filled with iron rust. Sides of top convex and undercut, suggesting imitation of a buffer or washer. Rivet in bottom of each foot. Feet have each six toes and double heel. Above instep, ridge indicating termination of foot. Probably stood about squarely on feet.

2234. Attached soles gone. Condition poor. Height, 0.054 m. Length, 0.1085 m. Two holes through top, of which one partially filled with iron rust. Sides of top as in drawing, except that lower band has rope finish. Beneath feet, bronze soles cast in same piece with remainder of object. From bottom of each projects a rivet indicating presence of a second pair of soles, which (as in Nos. **2232** and **2233**) were probably of iron. Six toes and a double heel. Decoration cast. Seems to have stood squarely on feet.

The tops of all the above standards seem to have had resting directly on them some object which was fastened by iron rivets. Probable that this object was itself of iron. For soles on feet, cf. low ring standards from Acropolis, with lion's feet resting on round sole or square plinth, or sole and plinth (De Ridder, *Catalogue*, etc., Nos. 80 and 66).

3. MISCELLANEOUS FORMS.

A. CONTAINERS.

2235. Fragment *a* only. Oblong shallow ladle. Broken in two pieces (*a*, *b*), which are in such poor condition that they do not fit. Combined length, 0.146 m. Length of fragment *a*, 0.106 m. Width, 0.041 m. Thickness, less than 0.001 m. Depth, about 0.005 m. End of handle forms curl just under bottom. Fragment *b*, width, 0.035 m. Pointed end. Length of point, about 0.01 m. Width, 0.005 m.–0.001 m. (tapering toward end).

2236. End of small ladle. Condition poor. Length, 0.025 m. Width, 0.02 m. Differs from fragment *b* of No. **2235** in that end is brought over to form a sort of toe. In upper surface near edge, hole punched from under side (hence before toe was formed).

2237. Ladle of which handle is lost. Width, 0.0565 m. Depth, about 0.007 m. Thickness, 0.0005 m. and less. Short stub of handle of same piece with cup. In centre of broken edge, hole (diameter, 0.0022 m.) now broken out. At 0.012 m. from commencement of handle, thin piece (size, 0.01 m. × 0.018 m.) riveted to inside of cup. Served as guy to keep handle from flattening.

The following piece is of uncertain identification, but seems similar to preceding number.

2238. From back of South Building. Small fragment of cup, part of some object, perhaps a ladle. Length, 0.029 m. Thickness, 0.0003 m. and less. At one side, ear (width, 0.01 m.–0.005 m.; present length, 0.0035 m.). Probably longer originally. Bottom of cup distinguished from sides. Depth, 0.002 m. Ornamented with cross in circles struck from above with punch in which cross was intaglio. Cross does not show sharply enough in drawing.

2239. (Shows back.) Sieve. Before cleaning, small piece of bronze net still attached. Condition poor. Length, 0.22 m. Width of round part, 0.111 m. Depth, about 0.007 m. End of handle turns under and to one side. Represents head and beak of bird. No details. Back of handle inscribed. See *Appendix*.

In the Carapanos collection (from Dodona) a strainer with Π on outer end of bowl.

PLATE CXXVI.

2240. From south slope. Bottom gone and handle — if one existed. Height, 0.067 m. Diameter at top, 0.0515 m., at bottom, 0.053 m. Thickness at top, 0.0025 m. to 0.0035 m. (including molding). Lower part formed by separate jacket, which fitted to outside of drum. Height, 0.0154 m. Width of legs, 0.0255 m. and 0.0265 m. (third leg mostly broken away). Bottom was applied to cylinder and held in place by jacket. Pieces of bronze solder still remain. On one side, eyelet (height, 0.0052 m.), the ends of which pass through cylinder and are bent back on inside. Diameter of eyelet, 0.0016 m. (inside). Piece of bronze in top of eyelet, perhaps wire. No other eyelet or attachment. Ornament (from top), molding, row of fine beads, leaf pattern, and two grooves. Two grooves at top of jacket and one about legs. All this ornament looks as though cast.

Cf. *Olympia*, No. 885, which has, however, a heavy vertical handle.

The following three pieces are of uncertain identification, but they may be from sides of box or casket.

2241. Fragment of rim. Condition poor. Length, 0.053 m. Height, 0.0145 m. Thickness at top, 0.007 m.; below, 0.001 m. Narrow band beneath rim, followed by zigzag in relief.

2242. Broken on all sides. Condition poor. Length, 0.047 m. Height, 0.0285 m. Thickness, 0.0035 m.–0.0045 m. Broad molding with concave centre. Beneath molding, side of vessel seems to have projected slightly outward.

2243. Fragment of rim. Condition poor. Length, 0.048 m. Height, 0.0153 m. Width of rim, 0.0034 m. Edge of under side bent back to about same width. In intervening space, plate attached to outside. One rivet remains in place. Seems to have been a rectangular vessel with shoulder.

2244. From south slope. Neck and mouth of flask. Mouth damaged. Sides pressed flat together. Height, 0.061 m. Width of neck, 0.038 m., across rim, 0.041 m. Width of rim, about 0.012 m. Outer edge of lip turned under about 0.001 m.

Large flat flask with similar neck and mouth from Vulci (Polledrara tomb) in British Museum.

B. HANDLES.

Not certain that all of the following are handles.

(*a'*.) Straight.

2245. Small fragment. About three fourths of width preserved. Length, 0.024 m. Width of half, 0.013 m. Heavy rib in centre, light rib or band at each side.

2246. Fragment of similar handle preserving about three fourths of width. Length, 0.029 m. Width of half, 0.0145 m.

2247. Fragment of similar handle. Original edge on both sides. Length, 0.032 m. Width, 0.03 m.

2248. (Shows under side.) Perhaps fragment of end of handle. Original edge at sides, probably nowhere else. Length, 0.03 m. Width, 0.028 m.–0.045 m. End appears to be turned under as a finish.

(*b'*.) Horizontal grip-handles (doubtful).

2249. Perhaps about half preserved. Length, 0.078 m. Width of shaft, 0.018 m. Thickness, 0.007 m. Diameter of foot, 0.028 m. × 0.034 m. Grip seems to be a separate piece. Foot concave.

2250. Shaft cut about one third through as with chisel and then broken off. Condition poor. Length, 0.042 m. Width of shaft, 0.0225 m. Thickness, 0.009 m. Diameter of foot, 0.037 m. ×

0.044 m. Under side concave and roughly finished.

2251. Perhaps side piece of composite handle. Length, 0.058 m. At top, cleft extending more than half width. The portion above is concavely rounded at back but perpendicular in front. It lacks 0.0025 m. of being in line with edge beneath. Cleft 0.0015 m.–0.003 m. wide, 0.007 m. deep on under side, and 0.0045 m. on upper. Height of blade, about 0.0165 m. In upper part two rivets. Form of object which was attached uncertain, but, owing to slight projection of rivet-heads, only a piece of sheet bronze can have been fastened to blade. This piece will then have been bent at right angles in case object was a handle, and may have served as coating for bar that would have extended at right angles from notch to assumed corresponding notch in another end piece opposite. Bottom slightly concave. Smoothly finished. Diameter, 0.025 m.

VI. IMPLEMENTS, UTENSILS, STRUCTURAL PIECES AND MATERIALS

1. PARTS OF VEHICLES.

A. FRAGMENT OF ANTYX.

2252. Broken at both ends. Length, 0.294 m. Diameter, 0.026 m. × 0.017 m. at one end, and 0.023 m. × 0.0175 m. at the other. Cast solid. On one flat side, beginning about 0.024 m. from small end, an inscription. See *Appendix*.

B. SMALL WHEELS.

2253. From south slope. Over half of felloe gone. Bent. Diameter, 0.1435 m. × 0.142 m. (originally about 0.1525 m. × 0.143 m.). Cast solid and in one piece. Imitates wooden wheel the parts of which are held together by metal plates. Central shaft braced in felloe by two cross-pieces. Diameter of shaft at centre, 0.011 m. Hole for axle, 0.0145 m. × 0.007 m. At one end, bronze block (probably of same piece with rest) projects into hole distance of 0.005 m., representing wedge. Axle and wheels turned together. Ornamented with parallel grooves in groups of three, one group at either side cross-pieces. Outside of grooves, shaft hexagonal. Flattened surfaces at joining with felloe. This joining strengthened by an oblong plate on each side, fastened by four rivets, two in felloe and two in axle. Plates and nails represented by engraved lines. Size of better-preserved plate, 0.008 m. × 0.0049 m. Cross-pieces, width, 0.008 m.; thickness, 0.0017 m. At joining with felloe, plate on both sides held by three rivets, which probably pass clear through, i. e. there are three in all. Size of plate, 0.012 m. × 0.0029 m. Cross-piece inserted into felloe, and plate (like all the others) sunk into prepared socket and consequently represented as even with surface. Felloe, width, 0.0085 m.; thickness, 0.0025 m. inside and 0.0018 m. outside. Ornamented with engraved line on each side close to outer edge. At 0.017 m. from shaft on one side, and 0.0195 m. : 0.0175 m. on the other, sets of two plates, one on each side of felloe and about opposite to each other. First set, 0.007 m. × 0.0029 m.; second, 0.0075 m. × 0.003 m. and 0.006 m. × 0.0035 m. Each plate has two rivet-heads, each set being held together by two rivets. The plates are intended to hold together sections of the felloe.

Similar, but much ruder, *Olympia*, No. 510. Wooden wheel with similar arrangement of spokes, but with round hub, from peat-bog of Mercurago, province of Novara, Italy. Montelius, *Civ. Prim. It.* I. pl. 1, No. 13. On sarcophagus from Vulci (*Mon. Ant.* VIII. pl. xix. c = Martha, *L'Art Etrusque*, p. 357) similar wheel, but with curved cross-bars. Add H. L. Lorimer, *J. H. S.* XXIII. pp. 132 ff.

2254. From above east end of Stoa under Cyclopean wall. Three spokes gone and over half of felloe. Cast solid. Diameter, 0.171 m. (originally, 0.187 m.). Diameter of hub, 0.019 m. Width, 0.019 m. Spokes do not appear on inside, but there are perforations where two have been broken out. Spokes roughly oval in section near hub, passing gradually to nearly round at rim. Size at hub, 0.01 m. × 0.007 m.; at rim, 0.0045 m.–0.0053 m. × 0.0045 m. Width of felloe, 0.019 m. Thickness of inner edge, 0.0035 m.; of outer edge, 0.005 m. Rim or tire projects slightly more on side not shown in PLATE.

The following fragment is of doubtful identification.

2255. Perhaps outer spoke of ornamental wheel. Hollow 'bell,' smaller end of which joins inner ring. Outer end of 'bell' broken off. Of ring only stubs remain. Length, 0.077 m. 'Bell' a rounded rectangle placed cornerwise. Circumference at large end, 0.12 m.; at small end, 0.088 m. Thickness at large end, 0.001 m.–0.0038 m. Inner circle solid. Diameter, about 0.01 m. Through small end of 'bell' and inner circle passes hole (diameter, 0.006 m.). Through it may have passed rod (probably of iron) connecting centre of wheel with outer felloe. Uncertain whether large end of 'bell' joined felloe or an intermediate outer circle.

For shape cf. *Olympia*, Nos. 471 (lead) and 472; also wheel from a *tomba a cerchio* at Vetulonia (delle Pelliccie), now in museum at Florence. Cf. *Scavi*, 1887, p. 472. Falchi, *Vetulonia*, p. 168, is different.

2. STRIGIL (HANDLE).

2256. Both ends broken. Length, 0.079 m. Width of upper part, 0.0165 m.–0.0235 m.; of lower part, 0.0145 m. Thickness, 0.0015 m. Inset at beginning of elbow, about 0.001 m. on each side. Upper end beveled at beginning of blade.

3. BELL.

2257. Broken at bottom. Clapper gone. Height, 0.062 m. Thickness of metal at lower edge, 0.001 m.–0.002 m. Shape that of rounded rectangle. At top, ring, of one piece with bell. Diameter of hole, 0.015 m. Clapper was attached to bronze staple which was infixed in under side of top. About staple, remains of bronze solder. Diameter of staple, about 0.005 m.

4. CYMBALS.[1]

(*a'*.) Plain.

2258. Handle gone. Edges cracked. Diameter, 0.07 m. Thickness at edges, 0.0005 m.–0.0017 m. Diameter of boss, about 0.042 m. At about centre of boss, hole cut from above. Diameter, 0.0035 m. Flange slightly bent up, especially at edge.

2259. Handle gone. Condition poor. Diameter, 0.078 m. Diameter of boss, 0.0435 m. In centre, hole. Diameter, 0.0035 m. Flange bends back slightly, and at edge is turned up (depth of roll, 0.001 m. and less).

PLATE CXXVII.

2260. Handle gone. Condition poor. Diameter, 0.0945 m. Diameter of boss, 0.055 m. Flange convex on under side. At edge, rim, of which width, 0.004 m.–0.005 m. It projects about 0.001 m. on under side, the remainder on upper.

Cf. *Olympia*, No. 513.

(*b'*.) Ornamented.

2261. Handle gone. Condition poor. Diameter, 0.0915 m. Diameter of boss, 0.045 m. In centre, hole (diameter, 0.005 m.). Thickness of metal, about 0.0006 m., except at edge, which is about 0.001 m.–0.0017 m., thus forming slight backward turn. Flange slightly convex on under side. Outer and inner edges on upper side have leaf pattern. Leaves of horseshoe shape. Round ends toward interior of flange. As leaves are not exactly alike they are either engraved or else punched with more than one punch.

Cf. *Olympia*, No. 517 (dotted adjacent semicircles).

5. KEY.

PLATE CXXVI.

2262. From West Building. Length, 0.065 m. Ring flat on inside and convex on outside. Diameter (inside), 0.0175 m. In barrel, hole. Diameter, 0.005 m. Depth, 0.01 m. Diameter of barrel, 0.0045 m.–0.0075 m. Thickness of flange, 0.003 m.–0.0065 m.; of centre piece, 0.0035 m.–0.0048 m. Except for groove on barrel above flange, ornamented on one side only (shows in PLATE). Teeth on outer edge of flange have on top, each an ×. On back of this edge a single diagonal line from each lower corner of depression between teeth, giving effect of zigzag.

6. KNIVES.

(*a'*.) Sickle.

PLATE CXXVII.

2263. Point injured and edge nicked. Length, 0.189 m. Blade fairly sharp where edge is preserved. Width, 0.03 m. and less. Thickness at back, 0.004 m. and less. Blade passes to but for insertion into handle. Length of but, 0.03 m.; width, 0.028 m.; thickness, 0.002 m.–0.0045 m. Near end, hole for rivet. Diameter, 0.0057 m. Hole drilled from side that shows in Plate. Cf. Tsountas, Ἐφημ. Ἀρχ. 1899, cl. 124, pl. 10, No. 43, from Syra (Χαλανδριανή); Schmidt, *Schliemann's Sammlung*, etc., No. 6454, from Troy VI.; *Rolfe, A. J. A.* VI. p. 106, No. XII. from Anthedon.

(*b'*.) Spatula.

PLATE CXXVI.

2264. Length, 0.15 m. Length of blade, 0.0755 m. Width, 0.025 m. Thickness,

[1] The objects from the Dictaean cave published in the *Annual of the British School at Athens*, VI. p. 109, fig. 41 (Hogarth), as shields appear to be different from these.

0.00025 m.–0.001 m. Both sides ornamented with fine curved zigzags. Pattern consists of diagonals running from edge to centre of blade. In upper part they are roughly parallel to each and cross blade. From about middle of length downward they do not go clear across. In some cases they meet each other, forming arrow-heads. Toward bottom parallelism is dropped and lines curve slightly outward fanwise. Handle tapers from width of 0.007 m. and thickness of 0.0026 m. to point. Edges angular. On both sides of handle, zigzag, the band of which is itself a zigzag of curved lines. Handle rather than tang, owing to decoration.

(*c'*.) Scraper or chopping knife.

PLATE CXXVII.

2265. Length, 0.1025 m. Width, 0.01 m.–0.0317 m. Thickness at top, 0.0018 m.–0.0027 m.; increases to 0. 0043 m. at beginning of blade, whence decreases on both sides to edge. Edge still fairly sharp. Groove lengthwise of top. Hence not intended to be used as chisel or wedge.

Cf. Dörpfeld (Götze), *Troja u. Ilion*, I. p. 346; *Excavations at Phylakopi in Melos* (Bosanquet and Welch), p. 190, pl. xxxviii. No. 3. Two specimens from Mycenae (outside shaft-graves), in Nat. Mus., Athens, No. 1347. Both flare more at blade than Heraeum celt. In British Mus., Third Egyptian Room, Case F, similar knives attached by means of cloth and wire to wooden blocks provided with handles, thus becoming planes.

(*d'*.) Scraper or chisel.

2266. Top rough and somewhat battered. Edge dull and blunted. Length, 0.078 m. Width, 0.0224 m.–0.0345 m. Thickness at top, 0.005 m., battered to 0.006 m. Uncertain whether present surface of top is original.

(*e'*.) Chisels (and uncertain objects of similar form).

Round.

2267. Length, 0.133 m. Width of blade, 0.01 m. Edge dull. Top battered. Just beneath, raised band roughly executed, but intended to represent a heavy ring to which a lighter ring is attached on under side. Cf. Schliemann, *Tiryns*, p. 167, No. 99.

2268. Uncertain, perhaps end of spit. Top gone. Blade damaged. Length, 0.052 m. Diameter of shaft, 0.002 m. Width of blade, 0.0032 m.

2269. From West Building. Uncertain. Top broken. Length, 0.0635 m. Flattened toward top. At break, 0.007 m. × 0.0035 m. Flat side of top lies diagonally with reference to axis of blade. Width of blade, 0.006 m.

Rectangular.

2270. Top broken off. Condition poor. Length, 0.072 m. Shaft, 0.0055 m. at top. Width of blade, 0.009 m. Edge blunted.

2271. From West Building. Top gone (partly cut and partly broken). Length, 0.0775 m. Bar, 0.0059 m. × 0.0062 m. at top. Blade in axis of broader side. Width, 0.008 m. Edge broken concavely. PLATE shows narrow side of blade.

2272. Uncertain. Seems to be complete. Blade bent over at end. Length, 0.091 m. Width, 0.004 m.–0.009 m. Thickness of shaft, 0.002 m.–0.003 m. Top somewhat battered. Blade blunt.

7. SPITS.

A more methodical classification than that here adopted would be by (1) style of shaft, (2) point or blade at end, (3) style of knob, (4) number of knobs. The fact, however, that so large a proportion of shafts and ends are defective imposes classification by preserved parts, i. e. (1) number of knobs, (2) style of knobs, (3) style of shaft, (4) point or blade.

Type a. No knob.

Class α. Round shaft.

Pointed ends.

2273. Bent. Length, 0.024 m. Thickness, 0.002 m.

2273 a. Uncleaned. Bent. Length, 0.272 m. Thickness, 0.0025 m.

Addenda. (*a'*.) Of the following ends some may belong to pins and pieces of wire, but the majority are probably from spits.

2274. Length, 0.067 m. Thickness, 0.001 m. Flexible.

2275. From back of South Building. Length, 0.048 m. Thickness, 0.0015 m.

2276. Length, 0.107 m. Thickness, 0.0015 m.

2277. Length, 0.101 m. Thickness, 0.0015 m.

2278. Uncleaned. Patinated. Length, 0.25 m. Thickness, 0.0019 m.

2279. From West Building. Freshly broken. Length, 0.055 m. Thickness, 0.002 m.

2280. From West Building. Length, 0.049 m. Thickness, 0.0021 m.

2281. From back of South Building. Length, 0.227 m. Thickness, 0.0021 m.

2282. From West Building. Large end smooth. Length, 0.10 m. Thickness, 0.0025 m. Perhaps part of separable pin.

2283. Broken end split down for distance of 0.08 m. Bent something like a hook. Length, 0.35 m. Thickness, 0.004 m.

2284. Bent. Length, 0.272 m. Thickness, 0.004 m.

2285. Length, 0.191 m. Thickness, 0.0043 m.

2286. Length, 0.434 m. Thickness, 0.005 m.

2287. Uncleaned. Bent so that small end passes through loop. Length, 0.682 m. Thickness, 0.003 m. Length makes classification as spit doubtful.

Discards: sixteen cleaned and one hundred and thirteen uncleaned. Sizes represented by above selection.

(*b'*.) The following bladed ends, though probably belonging to spits with one or more knobs, are, for reasons given above, put here.

2288. Blunted. Length, 0.116 m. Thickness, 0.0055 m.

2289. Length, 0.124 m. Thickness, 0.006 m. Width of blade, 0.007 m. Thickness, 0.003 m.

2290. Length, 0.155 m. Thickness, 0.005 m. × 0.006 m. Width of blade, 0.0075 m.

2291. Length, 0.221 m. Thickness, 0.0065 m. Width of blade, 0.012 m.

2292. Uncleaned. Twisted crack lengthwise. Length, 0.154 m. Thickness, 0.002 m. × 0.003 m. Width of blade, 0.004 m.

Discards of (*b'*): twenty-six, all uncleaned.

(*c'*.) The following have lost both ends. Probably the majority are from spits.

2293. Length, 0.054 m. Thickness, 0.0012 m.

2294. Length, 0.113 m. Thickness, 0.0017 m.

2295. Length, 0.104 m. Thickness, 0.0018 m.

2296. From back of South Building. Length, 0.0565 m. Thickness, 0.002 m.

2297. Length, 0.102 m. Thickness, 0.0021 m.

2298. From back South Building. Length, 0.099 m. Thickness, 0.0024 m.

2299. From back of South Building. Length, 0.092 m. Thickness, 0.0024 m.

2300. From south slope. Length, 0.169 m. Thickness, 0.0025 m.

2301. From first chamber at east end on lower terrace, April 28, 1893. Bent. Length, 0.093 m. Thickness, 0.0028 m. Possibly a part of a handle.

2302. From West Building. Length, 0.115 m. Thickness, 0.0035 m.

2303. Length, 0.135 m. Thickness, 0.0047 m.

2304. Length, 0.22 m. Thickness, 0.005 m.

2305. Length, 0.29 m. Thickness, 0.0055 m.

2306. Length, 0.273 m. Thickness, 0.0058 m.

2307. Length, 0.395 m. Thickness, 0.006 m.

2308. Length, 0.418 m. Thickness, 0.006 m.

2309. Length, 0.42 m. Thickness, 0.006 m.

2310. Length, 0.505 m. Thickness, 0.0085 m. Perhaps used as hook.

In the following numbers the blunted ends may be original.

2311. Length, 0.353 m. Thickness, 0.0023 m.–0.0038 m. Smaller end smoothly rounded.

2312. Length, 0.373 m. Thickness, 0.003 m.–0.004 m. Smaller end as in No. 2311.

Discards of (*c'*). Cleaned: forty-six of length and thickness included in above catalogued specimens. Two of them from south slope and one from back of South Building. Uncleaned: six hundred and sixty-four of length and thickness included as above except length, 0.048 m.; thickness, 0.0075 m.–0.011 m.

Class β. Shaft rectangular and round.

Group i. Pointed ends.

2313. Uncleaned. Length, 0.261 m. Thickness, 0.0015 m. Rounded toward point.

2314. Ends slightly blunted. Length, 0.126 m. Thickness, 0.0018 m. and less.

2315. Uncleaned. Bent double and twisted. Length as now, 0.222 m. Thickness, 0.0025 m. and less.

Addenda. Not certain that the following if complete would belong here.

(*a'*.) Fragments with pointed end.

2316. Length, 0.086 m. Thickness, 0.0015 m. and less.

2317. Length, 0.0435 m. Thickness, 0.0019 m.

2318. Uncleaned. Length, 0.15 m. Thickness, 0.0015 m.

2319. Length, 0.122 m. Thickness, 0.003 m. and less.

2320. Uncleaned. Length, 0.127 m. Thickness, 0.0023 m. × 0.001 m. and less. Toward large end flattens to 0.0007 m.

Discards of (*a'*): cleaned, three; uncleaned, forty.

(*b'*.) Fragments with blunt ends. Uncertain.

2321. Length, 0.465 m. Thickness, 0.0045 m. × 0.0055 m. to 0.003 m. × 0.0037 m.

2322. Uncleaned. Length, 0.165 m. Thickness, 0.0045 m. and less. Perhaps a nail.

(*c'*.) Fragments with bladed points.

2323. Uncleaned. Length, 0.312 m. Thickness, 0.002 m. Width of blade, 0.0045 m.

2324. Bent. Length, 0.234 m. Thickness, 0.0045 m. and less. Width of blade, 0.005 m.

2324 a. Uncleaned. Point injured. Length,

0.303 m. Thickness, 0.0018 m. and less. Width of blade, 0.0025 m.

The following number has a composite shaft.

2325. Bent. Length, 0.283 m. Thickness, 0.005 m. and less. Width of blade, 0.0065 m. Rectangle has three engraved lines at transition to round. Into rectangle is inserted flat piece (length, 0.026 m.; width, 0.005 m. × 0.0015 m.) which is held by a rivet. Uncertain how this piece ended.

Discards of (*c'*): two uncleaned.

Group ii. At one end, blunt tip, immediately preceded by groove.

2326. Uncleaned. Length, 0.304 m. Thickness, 0.003 m. and less. Rectangle terminates 0.069 m. from blunt end and 0.075 m. from point. Transition to round more abrupt toward blunt end. Shaft pinched in just before tip, which is imperfectly developed.

Addenda. Fragments. Not certain that all would belong here if complete.

(*a'*.) Ends. Arrangement by form of transition from rectangle to round, beginning with the more gradual transitions.

2327. Uncleaned. Length, 0.121 m. Thickness, 0.0043 m. and less. Diameter of tip, 0.0025 m.

2328. Uncleaned. Bent. Length, 0.228 m. Thickness, 0.004 m. Diameter of tip, 0.003 m. Transition plain but not abrupt.

2329. Uncleaned. Length, 0.154 m. Thickness, 0.004 m. and less. Rectangle swells at transition. Diameter of tip, 0.0013 m.

2330. Uncleaned. Length, 0.126 m. Rectangle, 0.005 m. sq. and less. Transition plain.

(*b'*.) Both ends lacking (corresponding to *Class α*, Addenda, *c'*).

2331. Uncleaned. Length, 0.147 m. Thickness, 0.0012 m.

2332. Uncleaned. Length, 0.222 m. Thickness, 0.0013 m. and less.

2333. Length, 0.147 m. Thickness, 0.0018 m. and less.

2334. From back of South Building. Length, 0.058 m. Thickness, 0.0028 m. and less.

2335. Length, 0.124 m. Thickness, 0.0029 m. and less.

2336. Bent like a hook. Length, 0.213 m. Thickness, 0.0039 m. and less. Near lower part of rectangle five lines close together.

2337. Length, 0.381 m. Thickness, 0.0039 m. and less. Transition gradual.

2338. From south slope. Length, 0.077 m. Thickness, 0.004 m. and less. Transition sharp. Probable traces of three lines of engraving on rectangle just before.

2339. Length, 0.402 m. Thickness, 0.0043 m. and less. Transition gradual.

PLATE CXXVIII.

2340. From West Building. Length, 0.264 m. Thickness, 0.0055 m. and less.

2341. Length, 0.179 m. Thickness, 0.0055 m. and less.

2342. Length, 0.448 m. Thickness, 0.006 m. and less.

2343. Length, 0.205 m. Thickness, 0.006 m. and less.

2344. Length, 0.342 m. Thickness, 0.0065 m. and less.

2345. Length, 0.24 m. Thickness, 0.0075 m. and less.

Discards similar to above: cleaned, fourteen, of which one has three lines of engraving at transition and one comes from West Building; uncleaned, two hundred and twenty-eight. Length and thickness of discards included in catalogued specimens.

The following are composite.

2346. Length, 0.18 m. Thickness, 0.006 m. and less. Gradual transition emphasized by three lines of engraving on rectangle. Into rectangular end is inserted piece, of which length, 0.029 m., thickness, 0.001 m.–0.0025 m. Uncertain whether riveted.

2347. Length, 0.19 m. Thickness, 0.0065 m. and less. In rectangular end, slot for insertion of separate piece of bronze or iron. Length of slot, 0.01 m. Width, 0.0013 m.

2348. Length, 0.24 m. Thickness, 0.0065 m. and less. Rectangle has three lines of engraving at transition. In end of rectangle is inserted bronze piece, of which length, 0.029 m., width, 0.006, thickness, 0.001 m.–0.003 m., increasing toward end of shaft. Fastened by two rivets.

Class γ. Part of shaft a twisted rectangular bar. (Fragments only.)

Group i. Rectangular (plain and twisted) and round.

(*a'*.) Points.

2349. Much bent. Length, about 0.30 m. Thickness, 0.003 m. and less. Tapers gradually to point.

(*b'*.) Blades.

2350. Length, 0.047 m. Thickness, 0.002 m. and less. Width of blade, 0.004 m.

(*c'*.) No end preserved.

2351. Uncleaned. Length, 0.253 m. Thickness, 0.0025 m. and less.

2352. Length, 0.113 m. Thickness, 0.0034 m. and less.

2353. From back of South Building. Length, 0.215 m. Thickness, 0.003 m. and less.

2354. Condition poor. Length, 0.305 m. Thickness, 0.0045 m. and less. Color reddish.

Discards of (*c'*): uncleaned, three. Dimensions included in the catalogued specimens.

Group ii. Rectangular (twisted) and round.

2355. Uncleaned. Length, 0.175 m. Thickness, 0.003 m. and less.

Discards: uncleaned, three, of which two are thicker, but all shorter, than No. 2355.

Group iii. Rectangular (plain and twisted).

2356. Uncleaned. Length, 0.057 m. Thickness, 0.0012 m. and less.

2357. Uncleaned. Length, 0.069 m. Thickness, 0.002 m. and less.

2358. Uncleaned. Length, 0.154 m. Thickness, 0.0025 m. and less. One end turned up sharply like a hook.

2359. Length, 0.194 m. Thickness, 0.0035 m. and less.

2360. Uncleaned. Length, 0.262 m. Thickness, 0.0045 m. and less.

Discards: uncleaned, seven, the dimensions of which are included among those of the above catalogued specimens, excepting one which is 0.292 m. in length.

Group iv. Rectangular (twisted).

2361. Uncleaned. Length, 0.078 m. Thickness, 0.0037 m. and less.

Discards: uncleaned, two.

Class δ. Rectangular shaft. (No complete pieces preserved, but some of the ends are probably complete in essential features of shaft.)

(*a'*.) Points.

2362. From West Building. Length, 0.085 m. Thickness, 0.0006 m × 0.0008 m.

2363. Part lost since photograph was made. Present length, 0.307 m. Thickness, 0.001 m. × 0.0007 m. and less.

2364. Uncleaned. Length, 0.312 m. Thickness, 0.0012 m. × 0.001 m.

2365. Length, 0.19 m. Thickness, 0.0015 m. × 0.001 m. Reddish. Flexible.

2366. Length, 0.192 m. Thickness, 0.0024 m. × 0.0022 m. Reddish. Flexible.

Discards: cleaned, one; uncleaned, five. Dimensions included in above specimens.

(*b'*.) Blades.

2367. From back of South Building. Length, 0.088 m. Thickness, 0.003 m. × 0.0022 m. Section near centre would be diamond-shaped. Square toward blade. Width of blade, 0.003 m. Decrease in thickness toward broken end, which is 0.002 m. × 0.0018 m., may indicate that object was a medical instrument.

2368. Uncleaned. Length, 0.331 m. Thickness, 0.0025 m. × 0.002 m. and less. Width of blade, 0.0032 m.

2369. Condition poor. Length, 0.145 m. Thickness, 0.0033 m. × 0.0029 m. near centre; decreases toward ends. Width of blade, 0.0045 m. (at beginning, 0.0033 m.; at end, 0.0037 m.).

Discards: uncleaned, four.

(*c'*.) Ends gone.

2370. Length, 0.101 m. Thickness, 0.0009 m. × 0.0008 m. and less.

2371. Length, 0.066 m. Thickness, 0.001 m. × 0.0008 m. and less.

2372. Uncleaned. Length, 0.193 m. Thickness, 0.0011 m. × 0.0009 m. and less.

2373. Length, 0.206 m. Thickness, 0.0014 m. × 0.0009 m. and less.

2374. From back of South Building. Length, 0.046 m. Thickness, 0.0015 m. × 0.0012 m. and less.

2375. From back of South Building. Length, 0.112 m. Thickness, 0.0015 m. and less.

2376. From south slope. Length, 0.148 m. Thickness, 0.0015 m. and less.

2377. From West Building. Length, 0.135 m. Thickness, 0.0019 m. × 0.0016 m. and less.

2378. Length, 0.133 m. Thickness, 0.0019 m. × 0.0016 m. (diamond section). Reddish. Flexible.

2379. Length, 0.141 m. Thickness, 0.0019 m. × 0.0016 m. and less. Section diamond-shaped.

2380. Length, 0.132 m. Thickness, 0.002 m. × 0.0016 m. and less. Section diamond-shaped.

2381. Length, 0.12 m. Thickness, 0.002 m. × 0.0018 m. Reddish. Section diamond-shaped.

2382. Length, 0.226 m. Thickness, 0.002 m. and less. Section diamond-shaped.

2383. Length, 0.065 m. Thickness, 0.0026 m. × 0.002 m. Section diamond shaped.

2384. Length, 0.128 m. Thickness, 0.003 m. and less.

2385. Uncleaned. Length, 0.407 m. Thick-

ness, 0.0035 m. × 0.004 m. and less. Section diamond-shaped.

2386. Length, 0.263 m. Thickness, 0.0035 m. × 0.0038 m.

2387. Length, 0.177 m. Thickness, 0.004 m. and less.

2388. Length, 0.178 m. Thickness, 0.004 m. × 0.0037 m.

2389. Length, 0.2035 m. Thickness, 0.006 m.–0.0025 m. Sides irregular and covered with small concave surfaces.

2390. From West Building. Length, 0.086 m. Thickness, 0.006 m. square. Slight groove near one end.

2391. Length, 0.062 m. Thickness, 0.0065 m. × 0.007 m. and less.

Discards: cleaned, nineteen; uncleaned, two hundred and thirty, the dimensions of which are included in those of the above specimens.

Type b. One knob.

FORM 1. KNOB A GRADUAL SWELLING OF SHAFT. SIDES OF KNOB ROUNDED.

Class a. Shaft partly round and partly rectangular (the portions next to knob being rectangular).

Both ends pointed.

2392. Length, 0.15 m. Thickness of shaft, 0.001 m. and less. Centre of knob to nearest end, 0.03 m. Thickness of knob, 0.002 m.

2393. Bent. Length, 0.208 m. Thickness of shaft, 0.0013 m. and less. Centre of knob to nearest end, 0.029 m. Thickness of knob, 0.0024 m.

Discards: uncleaned and in poor condition, two.

Addenda. Incomplete pieces.

(*a'.*) Ends.

2394. Uncleaned. Length, 0.193 m. Size of shaft, 0.0018 m. × 0.0015 m. and less. Centre of knob to point, 0.136 m. Thickness of knob, 0.003 m.

2395. Uncleaned. Bent. Length, 0.196 m. Shaft, 0.0017 m. × 0.0019 m. and less. Centre of knob to point, 0.0875 m. Thickness of knob, 0.003 m.

Discards of (*a'*): uncleaned, two. Dimensions included in preceding.

(*b'.*) Both ends lacking.

2396. Length, 0.094 m. Shaft, 0.0013 m. and less. Thickness of knob, 0.0025 m. Reddish.

2397. Uncleaned. Length, 0.215 m. Shaft, 0.0018 m. × 0.0015 m. and less. Thickness of knob, 0.0035 m.

2398. Uncleaned. Length, 0.205 m. Shaft, 0.002 m. × 0.0017 m. and less. Thickness of knob, 0.0032 m.

Discards of (*b'*): cleaned, one; uncleaned, twelve. Greatest dimensions: length, 0.41 m.; width of shaft, 0.003 m.; thickness of knob, 0.006 m. (all these measurements from different objects).

Class β. Similar to Class a, but with transition from rectangular to round part of shaft emphasized. Cf. Nos. 2327 ff.

Ends pointed. Arrangement by development of transition.

2399. Length, 0.177 m. Shaft, 0.0015 m. square at transition, elsewhere less. Centre of knob to short end, 0.0425 m. Thickness of knob, 0.0027 m. Transition plain, but not sharp.

2400. Uncleaned. Length, 0.406 m. Shaft, 0.0014 m. × 0.0015 m. and less. Centre of knob to nearest point, 0.062 m. Between this point and knob, slight but sharp transition. Transition between the other point and knob gradual. Thickness of knob, 0.0028 m.

Addenda. Incomplete pieces.

(*a.*) Points. Arrangement by form of transition.

2401. Uncleaned. Length, 0.307 m. Shaft generally 0.0013 m. × 0.0015 m. Centre of knob to nearest point, 0.098 m. Principal transition, which is plain, but not abrupt, on this end. On long end shaft thickens to 0.0018 m. at about 0.02 m. from knob and again to about same size just before transition. Transition gradual on this end. Thickness of knob, 0.0035 m.

Discards of (*a'*): uncleaned, one.

(*b'.*) Blunted ends, perhaps not pointed originally. More developed than preceding number.

2402. From back of South Building. Length, 0.10 m. Shaft, 0.003 m. × 0.0018 m. and less. Centre of knob to end, 0.071 m. Thickness of knob, 0.0042 m. Transition abrupt and accompanied by thickening of shaft.

2403. Length, 0.102 m. Shaft, 0.002 m. × 0.0019 m. and less. Centre of knob to tip, 0.082 m. Thickness of knob, 0.005 m. Transition fully developed and accompanied by increase of shaft to 0.0025 m. square.

Class γ. Similar to Class a, but with a portion of the rectangle twisted. (Fragments only.)

Points.

2404. Uncleaned. Bent. Length, 0.40 m. Thickness of knob, 0.004 m. Shaft, 0.0017 m. × 0.0013 m. Centre of knob from point, 0.1525 m. Principal transition on this end prepared by

increase in shaft to 0.002 m. × 0.0019 m. On other side of knob transition more gradual. Rectangular part of shaft twisted before principal transition and in middle of other side. Probably nearly complete.

Discards (both points gone): uncleaned, two.

Class δ. Shaft partly round and partly rectangular, the portions next to knob being round. (No complete specimens.)

Blade end.

2405. Uncertain how much gone from broken end, but there were probably no more knobs. Bent. Length, 0.338 m. Thickness of knob, 0.0075 m. Thickness of shaft, about 0.003 m. Centre of knob to end of blade, 0.177 m. Abrupt transition on this end, before which thickness of shaft increases to 0.0038 m. × 0.004 m. On same end near knob, five encircling lines of engraving. They serve to emphasize the transition from round to rectangle.

The following fragment, if complete, would perhaps belong to a different class.

2406. Both ends gone. Length, 0.136 m. Thickness of knob, 0.01 m. Thickness of shaft, 0.005 m.

Class ε. Shaft rectangular. (Fragments only.)

(*a'.*) Points.

2407. Uncleaned. Length, 0.256 m. Thickness of knob, 0.0032 m. Shaft, 0.0013 m. square and less. Centre of knob to point, 0.16 m.

2408. Length, 0.099 m. Thickness of knob, 0.0035 m. Shaft, 0.0015 m. × 0.0013 m. Centre of knob from point, 0.0755 m.

Discards of (*a'*): uncleaned one.

(*b'.*) Both ends lacking.

2409. Length, 0.084 m. Thickness of knob, 0.003 m. Width of sides, 0.0015 m. and less.

2410. Uncleaned. Length, 0.20 m. Thickness of knob, 0.0027 m. Shaft, 0.0017 m. × 0.0019 m. and less.

2411. Uncleaned. Length, 0.093 m. Thickness of knob, 0.004 m. Shaft, 0.0025 m. square and less.

Discards of (*b'*): cleaned, one; uncleaned, six.

Addenda to FORM 1. Fragments.

(*a'.*) Similar to *Class ε*, but with shaft partly twisted. Both ends gone.

2412. Length, 0.15 m. Thickness of knob, 0.0065 m. Shaft, 0.0035 m. × 0.003 m. and less.

(*b'.*) Fragment with knob at one end. Adjacent shaft first rectangular then angularly elliptical. Both ends gone.

2413. Length, 0.095 m. Thickness of knob, 0.0035 m. Shaft, 0.0016 m. square near knob, afterwards 0.0023 m. × 0.008 m.–0.0033 m. × 0.0023 m. Reddish.

FORM 2. KNOB AS IN FORM 1, BUT SIDES ARE ANGULAR.

Class a. Shaft partly round and partly rectangular, the portions next to knob being rectangular. (No complete pieces.)

(*a'.*) Points.

2414. Uncleaned. Length, 0.202 m. Knob, 0.003 m. square. Shaft, 0.0013 m. and less. Centre of knob, 0.14 m. from point.

2415. Uncleaned. Length, 0.185 m. Knob, 0.0025 m. square. Shaft, 0.002 m. and less. Centre of knob to point, 0.135 m.

2416. Uncleaned. Length, 0.454 m. Knob, 0.0027 m. square. Shaft, 0.0018 m. and less. Centre of knob to point, 0.3985 m.

2417. Uncleaned. Length, 0.255 m. Knob, 0.003 m. square. Shaft, 0.002 m. square and less. Centre to point, 0.108 m. Cf. No. **2680**.

Discards of (*a'*); uncleaned, two.

(*b'.*) Both ends lacking.

2418. Uncleaned. Length, 0.198 m. Knob, 0.0022 m. × 0.0012 m. Shaft, 0.0017 m. × 0.001 m.

2419. Uncleaned. Length, 0.222 m. Knob, 0.0028 m. × 0.003 m. Shaft, 0.002 m. × 0.0022 m. and less.

2420. Uncleaned. Length, 0.403 m. Knob, 0.005 m. square. Shaft, 0.003 m. × 0.0028 m. and less.

Discards of (*b'*): cleaned, one; uncleaned, five.

Class β. Similar to Class a, but with more developed transition from rectangular part of shaft to round. (No complete specimens.)

(*a'.*) Point.

2421. Uncleaned. Length, 0.271 m. Knob, 0.0027 m. square. Shaft, 0.0022 m. × 0.002 m. and less. Centre of knob, 0.114 m. from point. Principal transition on this end. Plain but not abrupt. No swelling. On the other side of knob, gradual transition.

(*b'.*) Ends.

2422. Uncleaned. Length, 0.333 m. Knob, 0.0027 m. × 0.0029 m. Shaft, 0.002 m. × 0.0017 m. and less. Shaft on one side of knob rectangular to end (0.06 m. from centre of knob). On the other side, plain transition to round at 0.14 m. from centre of knob.

2423. Uncleaned. Length, 0.30 m. Knob,

0.0038 m. square. Shaft, 0.0028 m. × 0.003 m. and less. Short portion at one end entirely rectangular. On the other side, plain but easy transition at 0.06 m. from centre of knob.

2424. Uncleaned. Length, 0.263 m. Knob, 0.0038 m. × 0.0045 m. Shaft, 0.0035 m. and less. Gradual transitions.

Class γ. Similar to Class α, but with rectangular part partially twisted.

Point.

2425. Uncleaned. Condition poor. Length, 0.222 m. Knob, 0.0022 m. × 0.002 m. Shaft, 0.0016 m. and less. Centre of knob, 0.15 m. from point. Gradual transition. Shaft mostly twisted on both sides of knob.

Class δ. Shaft rectangular.

Only pointed ends.

2426. Probably about complete. Length, 0.089 m. Knob, 0.0025 m. × 0.0007 m. Shaft, 0.002 m. × 0.0007 m. and less. Centre of knob to one end, 0.065 m. Both ends dull. Color reddish.

2427. Uncleaned. Length, 0.155 m. Knob, 0.0025 m. square. Shaft, 0.0017 m. square. Centre of knob to one end, 0.0735 m.

The following are incomplete.

(*a'*.) Points.

2428. Length, 0.455 m. Knob, 0.002 m. square. Shaft, 0.0013 m. square and less. Centre of knob to point, 0.40 m.

2429. Nearly complete. Length, 0.112 m. Knob, 0.002 m. × 0.0017 m. Shaft, 0.0016 m. × 0.0015 m. and less. Centre of knob to point, 0.082 m.

2430. Length, 0.108 m. Knob, 0.0025 m. × 0.0024 m. Shaft 0.0015 m. × 0.0017 m. Centre of knob to point, 0.0027 m.

(*b'*.) Both ends lacking.

2431. Uncleaned. Length, 0.142 m. Knob, 0.0016 m. × 0.0017 m. Shaft, 0.001 m. and less.

2432. Uncleaned. Length, 0.097 m. Knob, 0.003 m. × 0.0022 m. Shaft, 0.0012 m. square and less.

2433. Uncleaned. Length, 0.099 m. Knob, 0.0025 m. × 0.0022 m. Shaft, 0.002 m. × 0.0017 m. and less.

2434. Length, 0.104 m. Knob, 0.0034 m. Shaft, 0.0025 m. square and less.

2435. Length, 0.207 m. Knob, 0.0055 m. × 0.005 m. Shaft, 0.004 m. × 0.0038 m. and less.

The following number is more developed.

2436. Uncleaned. Length, 0.153 m. Knob, 0.0035 m. × 0.0033 m. Shaft, 0.0024 m. square.

Discards of (*b'*) : uncleaned, four.

FORM 3. KNOB TWO CONVEX OR STRAIGHT SURFACES WITH ROUNDED SIDES WHICH MEET WITH OR WITHOUT FORMING AN ANGLE. SHAFT CUT DOWN AT EITHER END OF KNOB, AND AT THESE POINTS USUALLY EMPHASIZED, SUCH EMPHASIS IN THE MORE DEVELOPED SPECIMENS TAKING THE FORM OF ONE OR MORE RINGS.

Owing to the lack of sharp distinctions between the specimens of greater and less degree of development, it seems best to group all the examples together according to the degree of development of the knob and its appurtenances.

Class α. Shaft partly rectangular and partly round, the part next to knob being rectangular.

(*a'*.) Ends pointed.

2437. Uncleaned. Length, 0.0325 m. Knob, 0.003 m. Shaft, 0.0014 m. × 0.0018 m. at knob, elsewhere less. Centre of knob to one point, 0.195 m. Transitions gradual, that on short end being the more marked.

2438. Bent. Length, 0.127 m. Knob, 0.0025 m. Shaft, 0.0018 m. × 0.0023 m. Centre of knob from one point, 0.0835 m. Transition gradual. Short end rectangular to point.

2439. Uncleaned. Length, 0.467 m. Knob, 0.0034 m. Shaft, 0.002 m. × 0.0018 m. Centre of knob to nearest end, 0.12 m. Transitions gradual.

2440. From back of South Building. Ends blunted. Length, 0.401 m. Knob, 0.0057 m. Shaft, 0.0022 m. × 0.0023 m. Centre of knob to one end, 0.227 m. Transition on this side plainly marked. The other side is rectangular to within 0.031 m. of end.

2440 a. Uncleaned. Length, 0.133 m. Knob, 0.0055 m. Shaft, 0.0027 m. × 0.003 m. and less. Centre of knob to nearest end, 0.051 m. This end rectangular.

(*b'*.) Points (enough of shaft preserved to render one-knob type certain).

Slightly developed, oblong knobs.

2441. Roughly coiled. Length, 0.438 m. Knob, 0.0035 m. Shaft, 0.0015 m. and less. Centre of knob to point, 0.088 m. Transitions gradual.

2442. Uncleaned. Light green patina. Length, 0.422 m. Knob, 0.0045 m. Shaft, 0.0025 × 0.0023 m. Centre of knob to point, 0.14 m. Transitions gradual, that on long end being the more plainly marked.

2443. From south slope. Bent. Length, 0.254 m. Knob, 0.0045 m. Shaft, 0.0028 m. × 0.0024 m. at knob, elsewhere less. Centre of knob to point, 0.167 m.

2444. Uncleaned. Length, 0.39 m. Knob, 0.006 m. Shaft, 0.0035 m. square near knob, elsewhere less. Transition gradual, but prepared for by slight increase in thickness of shaft.

2444 a. Uncleaned. Length, 0.375 m. Knob, 0.004 m. Shaft, 0.0019 m. square and less. Centre of knob to point, 0.131 m. Transitions gradual, but that on short end accompanied by slight swelling of shaft.

Discards similar to above: uncleaned, two.

The following have more developed knobs, with a tendency to diminish their length.

2445. From West Building. Length, 0.435 m. Knob, 0.0028 m. Shaft, 0.0015 m. (at knob, 0.0018 m.). Centre of knob to point, 0.12 m. Transitions gradual, that on short end being preceded by slight swelling of shaft.

2246. Length, 0.222 m. Knob, 0.0035 m. Shaft, 0.002 m. square (at principal transition), elsewhere less. Centre of knob to point, 0.118 m. Transition gradual, but preceded by above swelling. The other transition is gradual.

2447. Length, 0.208 m. Knob, 0.004 m. Shaft, 0.0025 m. square and less. Short end of shaft rectangular, long end has gradual transition. Centre of knob to point, 0.176 m.

2448. Uncleaned. Length, 0.305 m. Knob, 0.0075 m. Shaft, 0.0025 m. square and less. Centre of knob to point, 0.112 m. Transition plain, but not abrupt. From transition to point, engraved screw-threading. On other side of knob, shaft has gradual transition.

Discards similar to above (Nos. **2445–2448**) : uncleaned, one.

(*c'*.) Points which do not include enough of shaft to make it certain that there was one knob only.

Knob oblong. Partially developed.

2449. Uncleaned. Length, 0.42 m. Knob, 0.004 m. Shaft, 0.002 m. × 0.0017 m. and less. Transition gradual.

2450. Uncleaned. Length, 0.225 m. Knob, 0.005 m. Shaft, 0.0025 m. square and less. Advanced transition with preliminary swelling, connecting ring and round, blunt, ornamented terminal piece, engraved with spread screw-threading. This end is distant 0.0865 m. from centre of knob. On the other side of knob, gradual transitions.

Discards with knobs similar to Nos. **2449** f. : uncleaned, one.

Short partially developed knob, resembling ring.

2451. Uncleaned. Length, 0.156 m. Knob, 0.003 m. Shaft, 0.0025 m. × 0.0024 m. and less.

Short developed knobs with tendency to angularity.

2452. Point blunted. Length, 0.133 m. Knob, 0.0045 m. Shaft, 0.002 m. × 0.0025 m. and less. Gradual transitions.

2453. Length, 0.207 m. Knob, 0.005 m. Shaft, 0.0028 m. × 0.003 m. and less. Short end rectangular, the other has gradual transition. Zigzag on shaft at both sides of knob.

2454. Length, 0.153 m. Knob, 0.0045 m. Shaft, 0.002 m. × 0.0025 m. and less. Plain but not abrupt transition, with slight increase in thickness of shaft.

2455. Length, 0.219 m. Knob, 0.0085 m. Shaft, 0.0045 m. square and less. Preserved transition gradual but plain.

Discards similar to above (Nos. **2452** ff.) : uncleaned, seven.

(*d'*.) Complete pieces with blunt ends.

Developed knobs.

2456. Uncleaned. Length, 0.3275 m. Knob, 0.0055 m. Shaft, 0.0027 m. × 0.0029 m. at knob and main transition, elsewhere less. Ends plain, but one is preceded by a groove. Diameter, 0.0017 m. Distance from centre of knob, 0.181 m. Transition plain but not abrupt. The other transition is gradual.

(*e'*.) Blunt end with insufficient shaft to make certain that there was one knob only.

2457. Length, 0.249 m. Knob, 0.009 m. Shaft, 0.0045 m. square and less. Preserved transition plain but gradual.

2457 a. Length, 0.3855 m. Knob, 0.01 m. At either side, ring. Shaft, 0.0038 m. square and less. Centre of knob to end, 0.231 m. Groove at end. Gradual transitions.

2457 b. Condition poor. One rivet lost. Length, 0.114 m. Knob, 0.0095 m. Shaft, 0.0075 m. × 0.008 m. at knob, elsewhere less. Centre of knob to end, 0.0895 m. Transition plain but not abrupt. Marked with two (or perhaps three) grooves. Groove at end, forming sort of cap. This end of shaft spliced with blade 0.036 m. in length and 0.0035 m.–0.001 m. in thickness, which is inserted and held by two

rivets. Possibly not a spit, but formally similar.

Discards of (*e'*) : one, uncleaned.

(*f'*.) Ornamented blunt end with advanced transition.

2458. Nearly complete. Length, 0.265 m. Knob, 0.006 m. Shaft, 0.004 m. × 0.0035 m. and less. Centre of knob to short end, 0.069 m. Transition accompanied by increase in thickness and by disk-ring. Terminal piece ornamented with screw-threading and a convex surface. On the other side of knob, gradual transition. Might be taken as a straight pin of **Type k**. Seems better to regard it as a mixed or transitional form midway between pin and spit, the solid disk corresponding to the separable disk still preserved on certain spits, e. g. in the Carapanos collection (from Dodona.)

(*g'*.) Ornamented blunt end with advanced transition. (Original length and number of knobs uncertain.)

2459. Uncleaned. Length, 0.0815 m. Knob, 0.007 m. Shaft, 0.003 m. square and less. Centre of knob to preserved end, 0.06 m. Transition followed by terminal piece with screw-threading.

2460. Uncleaned. Length, 0.0915 m. Knob, 0.008 m. Shaft, 0.004 m. × 0.035 m. at transition, elsewhere less. Centre of knob to end, 0.0705 m. Ring at transition. Just before end, convex surface.

2461. Uncleaned. Length, 0.067 m. Knob, 0.0075 m. Shaft, 0.0035 m. and less. Centre of knob to end, 0.0455 m. Short terminal end ornamented with convex surfaces and screw-threading.

2462. Uncleaned. Length, 0.1535 m. Knob, 0.008 m. Shaft, 0.005 m. square and less. Centre of knob to end, 0.1435 m. Ring at transition. Round part of end covered with fine threading.

Discard of (*g'*) : uncleaned, two.

(*h'*.) Similar to (*g'*), but with terminal more developed. (In no case is original number of knobs certain.)

2463. Length, 0.097 m. Knob, 0.0105 m. Slight ring at either side. Shaft, 0.005 m. square at transition, elsewhere less. Centre of knob to end, 0.079 m. Ring after transition.

(*i'*.) Similar to (*h'*), but with highly developed mass of rings taking the place of transition. (Original number of knobs uncertain.)

2464. Length, 0.071 m. Knob, 0.012 m. At either side, two rings. Shaft, 0.0055 m. and less. Centre of knob to end, 0.0675 m. Sides of rectangular part of shaft ornamented with zigzag framed in five lines.

(*j'*.) Ends gone. No rings at side of knob.

Oblong rounded knobs. (Number of knobs uncertain.)

2465. Uncleaned. Patinated light green. Length, 0.211 m. Knob, 0.0024 m. Shaft, 0.0017 m. square. Gradual transition.

2466. Uncleaned. Length, 0.192 m. Knob, 0.0034 m. Shaft, 0.0018 m. square and less. Gradual transition.

2467. Uncleaned. Length, 0.295 m. Knob, 0.0075 m. Shaft, 0.003 m. square and less. Transition gradual. Size of knob and shaft disproportionate.

2468. Length, 0.252 m. Knob, 0.009 m. Shaft, 0.007 m. square next to knob, elsewhere less. On one side of knob, rectangular stub; on the other, nearly complete long end with gradual transition. Next to knob on short end, five or six faint grooves, beyond which a few circles. On long end, a single groove, after which faint circles, of which some are dotted, others crossed, and the remainder plain.

Discards similar to above (Nos. **2465 ff.**): uncleaned, ten.

Short rounded knobs.

2469. Uncleaned. Length, 0.158 m. Knob, 0.003 m. Shaft, 0.002 m. square and less. Gradual transition.

2470. Uncleaned. Length, 0.32 m. Knob, 0.004 m. Shaft, 0.003 m. square and less. Gradual transition.

Discards similar to above (Nos. **2469 f.**): uncleaned, one.

Oblong knobs, the sides of which, convex or straight, meet at a sharp or slightly rounded angle.

2471. Uncleaned. Length, 0.12 m. Knob, 0.0038 m. Shaft, 0.002 m. square at knob, elsewhere less. Gradual transition.

2472. Length, 0.09 m. Knob, 0.005 m. Shaft, 0.0025 m. square and less. Transition plain but gradual.

2473. Length, 0.132 m. Knob, 0.0057 m. Shaft 0.003 m. square and less. Transition gradual.

2474. Length, 0.181 m. Knob, 0.007 m. Shaft, 0.0037 m. square at knob, elsewhere less.

Gradual transition emphasized by two grooves. Rectangular part ornamented with broad undulating zigzag.

2475. From back of South Building. Length, 0.301 m. Knob, 0.008 m. Shaft, 0.0038 m. square at knob, elsewhere less. Transition, grooves, and zigzag as in No. **2474**.

2476. Length, 0.366 m. Knob, 0.008 m. Shaft, 0.004 m. square and less. Transitions gradual.

PLATE CXXIX.

2477. Length, 0.772 m. Knob, 0.013 m. Shaft, 0.0075 m. × 0.007 m. and less. Gradual transition.

Discards similar to above (Nos. **2471 ff.**): uncleaned, twelve.

Short, angular knobs, similar to preceding, but shorter.

2478. Length, 0.105 m. Knob, 0.0034 m. Shaft, 0.0018 m. square at knob, elsewhere less. Gradual transition. Original number of knobs uncertain.

2479. Bent, probably purposely, into leaf-shaped design. Length, 0.395 m. Length as bent, 0.085 m. Width, 0.045 m. Knob, 0.005 m. Shaft, 0.0025 m. × 0.0023 m. at knob, elsewhere less. Transitions gradual, that on shorter end being plainer.

2480. Uncleaned. Length, 0.395 m. Knob, 0.006 m. Shaft, 0.0024 m. square at knob, elsewhere less. Gradual transition.

2481. Length, 0.28 m. Knob, 0.007 m. Shaft, 0.0048 m. × 0.005 m. and less.

2482. Length, 0.085 m. Knob, 0.0127 m. Shaft, 0.006 m. square at knob, 0.007 m. at transition, elsewhere less.

Discards similar to above (Nos. **2478 ff.**): uncleaned, nineteen.

(*k'*.) Ends gone. Shaft has raised rings adjoining knob.

Rounded knobs with single ring at either side.

The following may also be regarded as straight pins of **Type k**. Cf. No. 2458.

2483. Length, 0.077 m. Knob, 0.0125 m. Shaft, 0.0035 m. × 0.0039 m. and less. Plain, slightly abrupt transition preceded by three engraved lines. On same side (that of which the more is preserved), zigzag in frame. Traces of zigzag also on other side. Uncertain how many knobs originally.

The following two are of doubtful classification.

2484. Length, 0.219 m. Knob, 0.01 m. Shaft, 0.003 m. × 0.0035 m. and less. Short end terminates in convex surface and cap. On longer side, gradual transition. Probably had only one knob.

2485. Length, 0.117 m. Knob, 0.0095 m. Shaft, 0.0035 m. square and less. On one side of knob, ornamented terminal end, on the other, rather abrupt transition. Traces of fine zigzag on shaft at either side of knob. Probably substantially complete.

Discards similar to No. **2483**: cleaned, one; uncleaned, thirteen. Similar to No. **2485**: uncleaned, one. Number of knobs in no case certain. Majority probably had but one knob.

Rounded knob with double ring at either side. (Original number of knobs uncertain.)

2486. Length, 0.16 m. Knob, 0.011 m. At either side, grooved ring. On one side of knob, short stub (0.007 m. × 0.003 m.), into which was inserted piece held by a rivet. On the other side, easy transition with one or two grooves. Rectangular part ornamented with double row of diamond hatching inclosed in frame. Belongs here formally, though not certain that it was a spit.

Angular knobs, short or slightly elongated, with a single ring at either side. (Original number of knobs uncertain.)

2487. Length, 0.171 m. Knob, 0.0105 m. Shaft, 0.0055 m. square and less. On longer preserved side, abrupt transition with three lines of engraving.

2488. From West Building. Length, 0.38 m. Knob, 0.0085 m. Shaft, 0.0045 m. × 0.005 m. at knob, elsewhere less. Transition plain, but gradual.

2489. Length, 0.4405 m. Knob, 0.014 m. Shaft, 0.0057 m. square and less. Transition gradual.

2490. From south slope. Length, 0.1355 m. Knob, 0.01 m. Shaft, 0.0049 m. square and less. On longer preserved side, easy transition emphasized by three rings engraved at beginning of round part.

Discards similar to above (Nos. **2487–2490**): uncleaned, six.

Oblong slightly angular knobs, with a single wide flat ring at either end. Rings rectangular. (Probably with but one knob originally.)

2491. Length, 0.234 m. Knob, 0.005 m.

Shaft, 0.0035 m. × 0.0031 m. and less. Longer preserved side has gradual transition. Probable traces of fine zigzag near knob.

2492. Found probably at northeast corner of main terrace near or under Cyclopean wall in 1893. Length, 0.578 m. Knob, 0.007 m. Shaft, 0.0038 m. × 0.004 m. and less. Gradual transitions. On longer preserved side, thickening of shaft (centre from centre of knob, 0.114 m.) to 0.0045 m. square. Probably transitional to two-knob type.

Similar rings, but knobs are more angular, and are shorter in proportion to thickness.

2493. Length, 0.274 m. Knob, 0.01 m. Shaft, 0.0057 m. square and less. Preserved short rectangular stub on one side of knob ornamented with cross inclosed at ends by a single groove. Longer piece on other side of knob with gradual transition emphasized by three grooves. On this side, cross inclosed by double grooves at ends. Uncertain how many knobs originally.

Angular knobs with several rings at sides.

2494. Length, 0.222 m. Knob, 0.0085 m. Shaft, 0.003 m. square and less. On one side of knob, three rings, on the other, an uncertain number and gradual transition. Could be regarded as a straight pin of **Type k**. Uncertain how many knobs originally.

2495. Length, 0.273 m. Knob, 0.0155 m. Shaft, 0.006 m. square and less. Single ring at each side of knob. On one side, coarse zigzag, on the other, gradual transition, with four grooves immediately preceding. Between knob and transition, another group of about four similar grooves.

Irregularly rounded rather flat knob with block-like rings, partially grooved, at either side.

2496. Length, 0.155 m. Knob, 0.007 m. Shaft, 0.0035 m. × 0.004 m. at transition, elsewhere less. Transition rapid, but not abrupt.

Addendum to Class α. It is uncertain whether the following was not a straight pin.

2497. Length, 0.166 m. Knob, 0.0105 m. Shaft, 0.0026 m. × 0.003 m. and less. On longer stub, gradual transition, marked by one or two grooves. Rectangle ornamented with zigzag of bent lines.

Class β. Shaft rectangular on both sides of knob. Long end partly twisted.

The following two numbers, being ends and nearly complete, include also a rounded portion beyond rectangle (or twisted rectangle). Angular knobs.

(*a'*.) Pointed end.

2498. From West Building. Length, 0.42 m. Knob, 0.0064 m. Shaft, 0.0035 m. × 0.003 m. and less. Centre of knob from point, 0.082 m. Transition gradual.

(*b'*.) Blunt end.

2499. Uncleaned. Length, 0.401 m. Knob, 0.007 m. Shaft, 0.003 m. × 0.0035 m. at knob, elsewhere less. Centre of knob to end, 0.158 m. Slight cap at end. Gradual transitions.

Discards: uncleaned, three. These have no ends preserved, and, probably in consequence thereof, no round part.

Class γ. Shaft rectangular. (*In no case is original number of knobs certain.*)

(*a'*.) Points.

Oblong rounded knob. No rings.

2500. Uncleaned. Length, 0.257 m. Knob, 0.0037 m. Shaft, 0.0019 m. × 0.0022 m. and less. Centre of knob to point, 0.13 m.

2501. Length, 0.101 m. Knob, 0.0037 m. Shaft, 0.0025 m. × 0.0027 m. and less. Centre of knob to point, 0.09 m.

Similar, but with shorter knob.

2502. Length, 0.128 m. Knob, 0.0039 m. Shaft, 0.003 m. × 0.028 m. and less. Centre of knob to point, 0.113 m.

Similar, but with angular knob.

2503. Uncleaned. Length, 0.186 m. Knob, 0.0075 m. Shaft, 0.0035 m. × 0.003 m. and less. Centre of knob to point, 0.087 m.

Discard similar to above (No. 2503): uncleaned, one.

(*b'*.) Blade end. (Original number of knobs uncertain.)

2504. Uncleaned. Length, 0.141 m. Knob, 0.005 m. Nearly rectangular. Shaft, 0.003 m. and less. Centre of knob to end of blade, 0.048 m. Width of blade, 0.0055 m.

The following doubtful piece is put here for convenience.

2505. Uncleaned. Length, 0.065 m. Knob, 0.0135 m. Shaft, 0.0048 m. × 0.0045 m. Centre of knob to edge of blade, 0.0585 m. On same side next to knob, ring rising abruptly from shaft, perhaps transitional to Form 4. Width of blade, 0.0095 m.

(*c'*.) Ends gone. Shaft plain at ends of knob.

Rounded knobs. Oblong.

2506. Length, 0.042 m. Knob, 0.0027 m. Shaft, 0.0015 m. square and less.

2506 a. Uncleaned. Length, 0.143 m. Knob, 0.0036 m. Shaft, 0.002 m. × 0.0018 m. and less except at 0.11 m. from knob, where it swells to 0.002 m. × 0.0025 m., probably to mark the commencement of a terminal end. This piece is somewhat doubtful.

2507. Uncleaned. Length, 0.114 m. Knob, 0.003 m. Shaft, 0.0025 m. × 0.0027 m. and less.

Discards similar to above (Nos. 2506 ff.): uncleaned, two.

Rounded knobs. Short.

2508. Uncleaned. Length, 0.057 m. Knob, 0.002 m. Shaft, 0.0018 m. square and less.

2509. Uncleaned. Length, 0.057 m. Knob, 0.004 m. Shaft, 0.0027 m. and less.

2510. Uncleaned. Length, 0.2105 m. Knob, 0.0045 m. Shaft, 0.0025 m. square next to knob, elsewhere less.

Discards similar to above (Nos. 2508 f.): uncleaned, two.

Angular oblong knobs.

2511. Length, 0.1125 m. Knob, 0.0037 m. Shaft, 0.0016 m. × 0.002 m. and less.

2512. Uncleaned. Length, 0.108 m. Knob, 0.004 m. Shaft, 0.0023 m. × 0.0025 m. and less.

2513. Uncleaned. Length, 0.109 m. Knob, 0.0045 m. Shaft, 0.0018 m. × 0.0025 m. and less.

2514. Uncleaned. Length, 0.118 m. Knob, 0.006 m. Shaft, 0.0022 m. × 0.0024 m. at knob, elsewhere less.

2515. Length, 0.066 m. Knob, 0.008 m. Shaft, 0.0038 m. square and less. Longer preserved side has zigzag of bent lines. Could be put under *Class α* (because of softening of corners as though for gradual transition), or under straight pins of **Type k**.

Discards similar to above (Nos. 2511 ff.): uncleaned, ten.

Angular knobs. Shorter.

2516. Length, 0.091 m. Knob, 0.0037 m. Shaft, 0.0023 m. square at knob, elsewhere less.

2517. Length, 0.1275 m. Knob, 0.0037 m. Shaft, 0.0022 m. square and less. Traces of zigzag on longer preserved end near knob.

2518. Length, 0.0975 m. Knob, 0.0027 m. Shaft, 0.0022 m. square at knob, elsewhere about half as large.

2519. Uncleaned. Length, 0.169 m. Knob, 0.0045 m. Shaft, 0.0015 m. × 0.0019 m. and less.

2520. Uncleaned. Length, 0.188 m. Knob, 0.0045 m. Shaft, 0.0028 m. × 0.0025 m. and less.

2521. Uncleaned. Length, 0.16 m. Knob, 0.007 m. Shaft, 0.0035 m. × 0.003 m. and less.

2522. Uncleaned. Length, 0.069 m. Knob, 0.095 m. Shaft, 0.0039 m. × 0.004 m. Ornamented. Short stub has on all sides dot in circle, preceded by single engraved line next to knob, followed by zigzag. On long stub, single line next to knob, followed by row of dots in circles and dot in double circles.

2523. Length, 0.162 m. Knob, 0.01 m. Shaft, 0.0052 m. × 0.005 m. and less.

2524. Uncleaned. Length, 0.108 m. Knob, 0.01 m. Shaft, 0.0032 m. square and less.

2525. Uncleaned. Length, 0.221 m. Knob, 0.01 m. Shaft, 0.004 m. × 0.0045 m. and less.

2526. Uncleaned. Length, 0.123 m. Knob 0.009 m. Shaft, 0.004 m. × 0.0042 m. and less. Advanced transition. Followed by short, round stub (diameter, 0.003 m.). Traces of zigzag ornament.

2527. Length, 0.11 m. Knob, 0.013 m. Shaft, 0.0075 m. square and less. Shorter stub has broken round surface at end, hence there were probably more knobs than one. Large zigzag of bent lines at both sides of knob.

Discards similar to above (Nos. 2516 ff.): cleaned, one; uncleaned, twenty-seven.

(*d'*.) Ends gone. A single ring at each end of knob.

Rounded knobs. Knobs are oblate or nearly spherical, but with pear-like flattening of sides toward poles.

2528. Uncleaned. Length, 0.084 m. Knob, 0.013 m. Shaft, 0.004 m. square and less. Probably advanced transition on longer stub.

2529. Uncleaned. Length, 0.0545 m. Knob, 0.013 m. Knob and attachments transitional to Form 5.

Discards similar to above (No. 2528): uncleaned, five.

Angular knobs. Short.

2530. Uncleaned. Length, 0.13 m. Knob, 0.007 m. Shaft, 0.0032 m. × 0.003 m.

2531. Length, 0.106 m. Knob, 0.012 m. Shaft, 0.0055 m. × 0.006 m. and less.

2532. Length, 0.044 m. Knob, 0.0135 m. Shaft, 0.0045 m. × 0.005 m.

Discards similar to above (Nos. 2530 ff.): uncleaned, four.

Class δ. Shaft round next to knob.

(*a'*.) Ends gone. A single light round ring at either side of knob.

Rounded knob.

2533. From West Building. Length, 0.106 m. Knob, 0.011 m. Shaft, 0.003 m. × 0.0034 m.

(*b'*.) One end with blade, the other gone. A single heavy round ring at either side of knob.

Oblong slightly developed knob resembling rather a simple convex surface.

2534. Length, 0.43 m. Knob, 0.008 m. × 0.007 m. Shaft, 0.0065 m. at knob, elsewhere less. Centre of knob to edge of blade, 0.286 m. Width of blade, 0.004 m.

FORM 4. SIMILAR TO FORM 3, BUT SWELLING OF SIDES IS RECTANGULAR. FORM 4 IS TO FORM 2 AS FORM 3 IS TO FORM 1. (No ends preserved.)

Class α. Shaft rectangular and round, the parts next to knob being rectangular.

(*a'*.) Shaft prominent at ends of knob, but without rings.

2535. Length, 0.1815 m. Knob, 0.0027 m. × 0.0025 m. Shaft, 0.0023 m. and less. Original number of knobs uncertain. Color reddish.

(*b'*.) One or more rings at either side of knob.

2536. Uncleaned. Length, 0.1515 m. Knob, 0.0038 m. × 0.003 m. At either end, single ring. Shaft, 0.0034 m. × 0.003 m. next to ring, elsewhere less. Longer stub has gradual transition.

The following piece is more advanced, and is transitional to a rectangular form (not represented at Argos), that would correspond to FORM 5 more closely than does FORM 6.

2537. Length, 0.132 m. Knob, 0.005 m. square. Shaft, 0.0035 m. × 0.003 m. and less. Raised rectangular rings, one at one end of knob and two at the other. Possible trace of zigzag of bent lines on shaft. Original number of knobs uncertain.

Class β. Shaft rectangular. (Original number of knobs uncertain.)

(*a'*.) Shaft prominent at ends of knob, but without rings.

2538. Uncleaned. Length, 0.144 m. Knob, 0.0028 m. × 0.003 m. Shaft, 0.0022 m. square and less. This piece probably had no more knobs.

(*b'*.) A single ring on shaft at either end of knob.

2539. Uncleaned. Length, 0.119 m. Knob, 0.005 m. square. Shaft, 0.0025 m. square and 0.003 m. square next to knob. Long stub increases to 0.0035 m. × 0.004 m., part of which is oxidation.

FORM 5. SIMILAR TO FORM 3 AS REGARDS SHAPE OF KNOB, BUT THE RING ON SHAFT AT ENDS OF KNOB HAS NOW BECOME AN APPENDAGE TO THE KNOB. KNOB WITH ITS RINGS APPEARS AS SOMETHING SEPARATE FROM SHAFT AND IN MOST CASES IS A SEPARATE PIECE. (There are no complete pieces and in no case is the original number of knobs known.)

Class α. Shaft rectangular and round, the parts next to knob being rectangular. Ends gone.

2540. Length, 0.339 m. Knob, 0.02 m. It is short, with convex sides. It forms one piece with rings, and is jacketed over the shaft. Shaft, 0.006 m. and less. Gradual transition. Not certain that this piece is a spit.

Class β. Shaft (so far as preserved) rectangular.

(*a'*.) Point.

2541. Length, 0.108 m. Knob, 0.016 m. With rings forms one piece which is jacketed on over shaft. Shaft, 0.004 × 0.0043 m. and less.

(*b'*.) Ends gone.

2542. Length, 0.0525 m. Knob, 0.016 m. With its rings forms a separate piece which is jacketed on. Shaft, 0.007 m. × 0.0075 m. At short end traces of round stub, 0.0065 m. in diameter.

2543. Length, 0.184 m. Knob, 0.015 m. Uncertain whether it forms a separate piece. Shaft, 0.0045 m. square.

Discards similar to above (Nos. 2542 ff.): uncleaned, three.

FORM 6. ADVANCED RECTANGULAR KNOB WITHOUT RINGS. KNOB RISES SHARPLY FROM SHAFT, WITH WHICH IT FORMS ONE PIECE. (No complete pieces.)

Shaft rectangular (so far as preserved).

Ends gone.

Knob plain.

2544. Uncleaned. Length, 0.13 m. Knob, 0.0041 m. square. Shaft, 0.0028 m. × 0.003 m. Original number of knobs uncertain.

Knob ornamented.

2545. From West Building. Length, 0.139 m. Knob, 0.006 m. square. Three fine lines across each end inclosing cross, on all four sides. Line of cross double in two places. On one side, fine lines along long edges, one on each edge. Shaft, 0.004 m. square and less. Probably but one knob.

FORM 7. SIMILAR TO FORM 6, BUT KNOB IS DIVIDED BY BROAD GROOVE IN CENTRE WITH SLOPING SIDES. ENDS FALL SHARPLY. IN SPITE OF DIVISION IS ESSENTIALLY ONE KNOB.

Shaft rectangular and round, the parts next to knob being rectangular.

Only one piece, the ends of which are gone, but which probably had but one knob.

2546. Length, 0.537 m. Length of knob, 0.0095 m. + 0.0085 m. Sides, about 0.0055 m. square. Shaft, 0.004 m. × 0.0045 m. and less. Gradual transitions.

Type c. Two knobs.

FORM 1. KNOB A THICKENING OF SHAFT. SIDES OF KNOB ROUND.

Shaft rectangular and round, the parts next to and between knobs being rectangular.

Only one specimen, and that with both ends gone.

2547. Uncleaned. Length, 0.257 m. Knobs, 0.007 m. Centre to centre, 0.05 m. Shaft, 0.003 m. × 0.0035 m. and less. Gradual transition with slight thickening of shaft on mixed end.

FORM 2. KNOB A THICKENING OF SHAFT. SIDES OF KNOB RECTANGULAR.

Class α. Shaft rectangular and round, the parts next to and between knobs being rectangular.

Both ends gone.

2548. Uncleaned. Length, 0.314 m. Knobs, 0.0035 m. square. Centres, 0.018 m. apart. Shaft, 0.0024 m. square and less. One stub rectangular, the other has gradual transition with swelling.

Class β. Shaft rectangular.

Both ends gone.

2549. Uncleaned. Length, 0.193 m. Knobs, about 0.005 m. square. Centres, 0.034 m. apart. Shaft, 0.0028 m. square. Longer stub is slightly twisted and has trace of zigzag.

Class γ. Shaft between and adjoining knobs nearly elliptical (i. e. rectangular with rounded angles), but toward point becomes somewhat more rounded.

Point.

2550. Uncleaned. Length, 0.16 m. Knobs, 0.003 m. × 0.0027 m. Centres, 0.016 m. apart. Shaft, 0.0025 m. × 0.002 m. and less. Centre of nearest knob to point, 0.13 m.

[1] Developed specimen with advanced terminal end from Tegea (*Mitth.* V. p. 67, pl. iv. a [Milchhöfer]). Movable disk at beginning of *long end*.

FORM 3. SIDES OF SHAFT INCUT AT ENDS OF KNOBS, WHICH ARE CONVEX, WITH ROUNDED SIDES. ENDS OF SHAFT ADJOINING KNOBS TEND TO INCREASE IN EMPHASIS. CORRESPONDS TO **Type b**, FORM 3.

Class α. Shaft rectangular and round, the parts near to and between knobs being rectangular.[1] (No complete pieces.)

(*a'*.) Point.

PLATE CXXX.

2551. Length, 0.611 m. Knobs, 0.009 m. Distance apart, 0.026 m. Shaft, 0.0046 m. × 0.005 m. Centre of nearest knob to point, 0.086 m. At either end of each knob, raised flat rectangular ring. Transitions gradual.

(*b'*.) Preserved end plain and blunt. No cap.

Larger and more developed knob near more advanced transition.

2552. Length, 0.405 m. Knobs, 0.006 m.–0.009 m. Distance apart, 0.0185 m. Shaft, 0.004 m. square and less except at transition, which is 0.005 m. × 0.004 m. Gradual transition.

Knobs of same size, but original number uncertain.

2553. Length, 0.423 m. Knobs, 0.014 m. Shaft, 0.0065 m. square and less except at transition, which is 0.008 m. square. Nearest knob to end, 0.299 m. Traces of zigzag on rectangular part of shaft.

(*c'*.) Preserved end plain and blunt, but with cap.

Low rounded knobs with a single ring at either side of each. (Original number of knobs uncertain.)

2554. Length, 0.415 m. Knobs, 0.008 m. Distance apart, 0.064 m. Shaft, 0.005 m. near knobs, elsewhere less. Centre of knob to end, 0.303 m. Gradual transition.

Rounded knobs with a single ring at either side of each. (Original number of knobs uncertain.)

2555. Length, 0.417 m. Knobs, 0.014 m. Distance apart (between rings), 0.071 m. Shaft, 0.006 m. square near knobs, elsewhere less. Gradual transition.

Developed angular knobs with several rings at either side of each. (Original number of knobs uncertain, but probably not less than three.)

2556. Length, 0.293 m. Knobs, 0.0145 m. Interspace, 0.024 m. Shaft, 0.0055 m. square at knobs, elsewhere less. Shorter stub has four rings next to knob and four at break. Longer stub has four next to knob and five at transition. Between knobs, three and five. Transition plain, but not abrupt. Nearest knob to end, 0.203 m.

(d'.) Preserved end a plain round terminal piece, uncertain whether with cap.

Rounded knobs with grooved ring at either side.

2557. Length, 0.29 m. Knobs, 0.012 m. Interspace, 0.073 m. Shaft, 0.005 m. × 0.006 m. and less. Transition rapid, but not abrupt. Length of terminal, 0.075 m.

(e'.) Both ends gone.

Rounded knobs with a single ring at either side of each. (Original number of knobs uncertain.)

2558. Length, 0.383 m. Knobs, 0.0125 m. Interspace, 0.07 m. Shaft, 0.006 m. square near knobs, elsewhere less. Gradual transition.

Oblong angular knobs. No rings.

2559. Length, 0.22 m. Knobs, 0.01 m. Interspace, 0.035 m. Shaft, 0.005 m. square and less. Transition plain but gradual.

2560. Length, 0.226 m. Knobs, about 0.01 m. Transition followed by terminal, the beginning of which is rectangular, the remainder round. Probably no more knobs originally.

Discard similar to above: uncleaned, one.

Short angular knobs. No rings.

2561. Length, 0.321 m. Knobs, 0.012 m. Interspace, 0.037 m. Shaft, 0.007 m. square and less. Probably no more knobs originally.

2562. Length, 0.365 m. Knobs, 0.009 m. Interval, 0.02 m. Shaft, 0.0045 m. square and less. Gradual transition. Probably no more knobs originally.

2563. Length, 0.171 m. Knobs, 0.012 m. × 0.015 m. Interval, 0.042 m. Shaft, 0.006 m. × 0.0065 m. and less. Short terminal.

Addenda to Class α. Fragments with knobs of unequal size. Probable that nearly all had originally three knobs, but the case of No. **2552** makes it preferable to put them here. Arrangement from rounded to angular knobs.

2564. Length, 0.157 m. Knobs, 0.013 m. and 0.008 m. Interspace, 0.021 m. Advanced transition (on side of smaller knob) followed by round ornamented terminal (length, 0.039 m.), beginning with disk.

2565. Length, 0.115 m. Knobs, 0.011 m., 0.007 m., the smaller being toward transition. Interspace, 0.014 m. Advanced transition followed by ornamented terminal piece beginning with disk as in No. **2564**. Length, 0.054 m. Traces of zigzag on rectangular part of shaft, on all four sides.

2566. Uncleaned. Length, 0.157 m. Knobs, 0.014 m. and 0.0095 m., the smaller being toward transition. Interspace, 0.017 m. Advanced transition followed by round part, after which secondary transition and round terminal, of which length, 0.057 m.

The fact that the smaller knob is, in the above addenda, nearer the transition is without significance in those cases in which it was balanced by a similar smaller knob on the other side of larger knob.

Discards similar to above (Nos. **2564** ff.): cleaned, five; uncleaned, two.

Class β. Rectangular shaft. As no ends are preserved, the majority were probably of Class α. (Original number of knobs in no case certain.)

2567. Length, 0.258 m. Knobs, 0.007 m. Interspace, 0.075 m. Shaft, 0.005 m. square at knobs, elsewhere less.

2568. Length, 0.063 m. Knobs, 0.016 m. Interspace, 0.0275 m.; at each end, on all four sides, two grooves (distance apart, 0.004 m.) connected by diagonal cross lines.

2569. Length, 0.138 m. Knobs, 0.01 m. and 0.011 m. Interspace, 0.045 m. Shaft, near knobs, 0.047 m. square, elsewhere less.

2570. Length, 0.128 m. Knobs, 0.015 m. Interspace, 0.037 m. Shaft, 0.005 m. and less. Faint traces of ornament near knobs, perhaps lines connected by diagonals as in No. **2568**, and circles.

2571. Length, 0.15 m. Knobs, 0.007 m. and 0.0065 m. Interspace, 0.025 m. Shaft, 0.005 m. (near knobs, elsewhere less).

The following have a single ring on shaft at either side of knobs.

2572. Length, 0.152 m. Knobs, 0.01 m. and 0.011 m. Interspace, 0.034 m. Shaft, 0.006 m. and less. Traces of zigzag between knobs.

2573. Length, 0.113 m. Knobs, 0.009 m. Interval, 0.017 m. Shaft, 0.004 m. × 0.0045 m. near knobs, elsewhere less.

Discards similar to above (Nos. **2572** f.): cleaned, one; uncleaned, four.

Addenda to Class β. Knobs of unequal size.

(a'.) Without rings.

2574. Length, 0.086 m. Knobs, 0.018 m., 0.009 m. Interval, 0.0315 m. On all four sides, broad zigzag of bent lines.

2574 a. Uncleaned. Length, 0.0365 m. Knobs, 0.01 m., 0.005 m. Interval, 0.022 m. Shaft, 0.0045 m. square. All four sides occupied with ornament. Space divided by vertical lines into three sections, in each of which, a diagonal cross. Lines and crosses struck with chisel.

Discard similar to above (Nos. **2574** f.): one.

(b'.) One or more rings next to each end of knobs.

2575. Length, 0.055 m. Knobs, 0.022 m. and 0.01 m. Interval, 0.013 m. Shaft, 0.007 m. square. Single plain rings.

2576. From West Building. Length, 0.089 m. Knobs, 0.007 m. and 0.008 m., larger knob being toward transition. Interspace, 0.0115 m. Shaft near knobs, 0.0042 m., 0.0045 m. Advanced transition which was followed by disk and terminal end.

2577. Length, 0.076 m. Knobs, 0.008 m. and 0.013 m. Interval, 0.0115 m. Shaft, 0.004 m. square. Single rings.

2578. Length, 0.096 m. Knobs, 0.0115 m. and 0.005 m. Interval, 0.011 m. Shaft, 0.003 m. square. Three rings outside large knob, elsewhere two. Between large knob and transition, framed zigzag. Portion between small knob and break divided by two lines into two sections, of which the first has framed zigzag; the second is plain.

2579. Uncleaned. Length, 0.04 m. Knobs, 0.0125 m., 0.0095 m. Interspace, 0.02 m. Shaft, 0.0055 m. square. Single rings. Stub of shaft on side of smaller knob has broken out hole. Diameter, 0.0015 m.

Discards of (b'): uncleaned, six.

Class γ. Shaft rectangular and round, the ends and the part between knobs being round.

Both ends blunt, shorter end probably complete.

2580. Length, 0.322 m. Knobs, 0.0078 m. Interspace, 0.0115 m. Ornamented with fine parallel threading. Shaft, 0.003 m. square at knobs, elsewhere less. Shorter end has plain but not abrupt transition to round. Longer end has gradual transition. Near knobs, zigzag of bent lines on all four sides.

Addendum to Class γ. The following could also be regarded as straight pins of **Type f**.

2580 a. Both ends incomplete. Length, 0.142 m. Knobs, 0.008 m., 0.0125 m. Ring at either side of each. Interval between rings, 0.023 m. Shaft, 0.0035 m. square. Between knobs, rounded rectangular bar and outside larger knob, round shaft.

Form 4. Similar to Form 3, but swelling of sides is rectangular. (No complete specimens.)

Class α. Shaft rectangular and round.

Both ends gone.

2581. Length, 0.827 m. Knobs, 0.0075 m. × 0.0065 m. and 0.007 m. square. Interspace, 0.251 m. Shaft, 0.0065 m. × 0.006 m. near knobs, elsewhere less. Smaller knob acts as transition to following end, which is round. Next to knobs, swelling of shaft but no rings.

Similar but more developed rectangular knob, with a square ring at either side of knobs.

2582. Length, 0.307 m. Knobs, 0.007 m. square. Interval, 0.0575 m. Shaft, 0.0045 m. square and less. Direct but not abrupt transition acompanied by slight thickening of shaft.

Class β. Shaft rectangular and round, with secondary swelling near end as well as at transition.

Ends.

2583. Length, 0.536 m. Knobs, 0.0035 m. × 0.003 m. Slightly developed. Interspace, 0.01 m. Shaft, 0.0027 m. × 0.0025 m. and less. Plain but gentle transition to round. Probable that this piece is practically complete.

2584. Uncleaned. Length, 0.25 m. Knobs, 0.0035 m. and 0.0033 m. Interspace, 0.0225 m. Ring adjoining each knob on side toward ends. Shaft, 0.0023 m. square. From middle of secondary swelling to preserved end, screw-threading.

Form 5. Similar to Form 3, but ring at either end of knob has now become an appendage to it. Cf. **Type b**, Form 5.

Rectangular shafts. No ends preserved.

Plate CXXXI.

2585. Length, 0.247 m. Knobs, 0.014 m. and 0.0135 m. Interspace, 0.062 m. Shaft, 0.005 m. square and less. Advanced transition. Knobs probably of same piece with shaft.

2586. Length, 0.18 m. Knobs, 0.015 m.

Interspace, 0.0665 m. Shaft, 0.0035 m. square and less. Knobs appear to be jacketed on.

2587. Length, 0.384 m. Knobs, 0.0275 m. Interval, 0.057 m. Shaft, 0.0083 m. square and less. Gradual transition on longer stub. Knobs perhaps of separate pieces from shaft.

2588. From south slope. Length, 0.234 m. Knobs, 0.023 m. and 0.0225 m. Interspace, 0.041 m. Shaft, 0.006 m. square. Rectangular inset near end of longer stub probably to prepare for transition. Between rings of each knob, longitudinal striations. Knobs of separate pieces from shaft.

Type d. Three knobs.[1]

FORM 1. KNOB A SIMPLE SWELLING OF SHAFT. SIDES OF KNOB RECTANGULAR. KNOBS OF THIS FORM BELONGING TO **Type d** ARE MORE ADVANCED THAN THOSE OF THE CORRESPONDING FORMS OF **Types b** AND **c**.

Shaft rectangular and round. No complete pieces.

2589. Shorter end may be complete. Length, 0.368 m. Knobs, 0.007 m. square. Interspaces (reckoned from centres of knobs), 0.027 m. Shaft, 0.0053 m. square and less. Centre of nearest knob to end, 0.027 m. On long stub, gradual transition. On all four sides along knobs, slightly wavy band of zigzag of bent lines finely engraved.

2590. Both ends gone. Length, 0.331 m. Knobs, 0.007 m. square. Centres, 0.032 m. and 0.029 m. apart. Shaft, 0.005 m. square and less. One end round, with broad screw-threading, which is not engraved but struck with chisel in connecting sections of about 0.002 m. in length. This end preceded by rapid transition. Between knobs, on all four sides, broad zigzag of bent lines.

FORM 2. SIDES OF SHAFT INCUT AT ENDS OF KNOBS, WHICH ARE CONVEX, WITH ROUNDED SIDES. PORTIONS OF SHAFT ADJOINING KNOBS TEND TO INCREASE IN EMPHASIS. CF. FORM 3 OF **Types b** AND **c**.

Class a. Shaft rectangular and round.

Group i. Central knob larger than the other two.

(*a'*.) Ends.

2591. Plain end probably about complete, the other not. Length, 0.418 m. Knobs, 0.01 m., 0.0135 m., 0.009 m. (from ornamented end). Interspaces, 0.017 m., 0.016 m. respectively. Shaft, 0.007 m. square at principal transition, elsewhere less. One transition advanced and followed by ornamented terminal, the other easy but marked with three lines of engraving. Zigzag of bent lines on four sides of this part of rectangle.

2592. Length, 0.515 m. Knobs, 0.01 m. and 0.0075 m. Interspace, 0.022 m. Shaft, 0.0035 m. and less. Nearest knob to end, 0.40 m. Gradual transition. Broken end had advanced transition and ornamented round terminal. On rectangular part of this end, fine zigzag of bent lines.

(*b'*.) Both ends gone.

Short angular knobs without ring at end.

2593. Length, 0.298 m. Knobs, 0.0085 m., 0.011 m., 0.0095 m. (from direction of advanced transition). Interspaces, 0.033 m. and 0.032 m. respectively. Shaft, 0.0055 m. square and less. One transition advanced (0.075 m. from nearest knob), the other gradual (0.104 m. from nearest knob). On rectangular part, narrow zigzag of bent lines.

2594. Length, 0.293 m. Knobs, 0.009 m., 0.011 m., 0.0085 m. (from advanced transition). Interspaces, 0.024 m. Shaft, 0.0055 m. square and less. One transition advanced (0.098 m. from nearest knob), the other gradual (0.07 m. from nearest knob). On rectangular part, traces of zigzag of bent lines.

Discard similar to above (**2593 f.**): uncleaned, one.

Oblate rounded knobs with advanced ring at either end of each knob.

2595. Length, 0.153 m. Knobs, 0.0135 m. and 0.0095 m. Intervals, 0.02 m. and 0.0175 m. Shaft, 0.004 m. square and less. Gradual transitions, one at 0.023 m. from nearest knob marked by three engraved lines, the other at 0.028 m. from the other small knob with four lines. The latter led to round terminal. On all sides of rectangular part, narrow zigzag of bent lines.

Ordinary knobs. Arrangement from rounded pear-shaped sides to short sides with sharp angles. Single ring at end of each knob.

2596. Length, 0.318 m. Knobs, 0.008 m. and 0.012 m. Intervals, 0.01 m. and 0.009 m. Shaft, 0.005 m. × 0.0055 m. at principal transition, elsewhere less. At 0.045 m. from nearest knob advanced transition, probably followed by round terminal. At 0.032 m. from the other small knob, gradual transition with two engraved lines. Entire rectangular part covered with fine zigzag of bent lines.

2597. Length, 0.18 m. Knobs, 0.006 m., 0.012 m., 0.0075 m. (reckoned from principal transition). Interspaces, 0.015 m. and 0.018 m. respectively. Shaft, 0.0036 m. square and less, except at transition, where it is more. At 0.0395 m. from nearest knob, advanced transition with disk into which round terminal was inserted. At 0.032 m. from the other small knob, gradual transition with two and three lines. Traces of zigzag of bent lines on rectangular part.

2598. Length, 0.108 m. Knobs, 0.006 m., 0.012 m., 0.0065 m. Interspaces, 0.014 m., 0.0125 m. Shaft, 0.0035 m. square and less. At 0.02 m. from knob, abrupt transition with ring, groove, and disk. At 0.013 m. from other small knob, plainly marked transition to round.

2599. Length, 0.124 m. Knobs, 0.006 m., 0.011 m., 0.0075 m. (counting from shorter stub). Interspaces (between rings), 0.0085 m. Shaft, 0.0037 m. × 0.004 m. At 0.0165 m. from smallest knob, break, which was followed by round part. At 0.015 m. from other small knob, easy transition with three lines.

2600. Length, 0.2055 m. Knobs, 0.008 m., 0.0135 m. Interspaces, 0.01 m., 0.0125 m. Shaft, 0.004 m. × 0.0037 m. and less. Plainly marked transition. Traces of zigzag of bent lines on rectangular part.

2601. From West Building. Length, 0.1665 m. Knobs, 0.007 m., 0.01 m. Interspaces, 0.013 m., 0.017 m. Shaft, 0.003 m. square and less, except at transition (0.0035 m. × 0.004 m.). Transitions equidistant (0.018 m.) from knobs, the one advanced to terminal, the other plainly marked to round.

2602. Length, 0.182 m. Knobs, 0.01 m., 0.0175 m. Interspaces, 0.022 m., 0.021 m. Shaft, 0.0057 m. square and less (at transition, 0.006 m. square). At 0.0675 m. from knob, advanced transition with disk and round ornamented terminal. At the other end, stub (length, 0.004 m.; width, 0.006 m.; thickness, 0.0024 m.), in end of which hole (broken out) 0.0025 m. in diameter. Shaft was therefore composite. Faint traces of zigzag of bent lines.

2603. Length, 0.133 m. Knobs, 0.0075 m., 0.01 m., 0.008 m. Interspaces, 0.018 m., 0.02 m. Shaft, 0.004 m. × 0.0045 m. and less. Advanced transition with disk, followed by ornamented round terminal.

2604. Length, 0.225 m. Knobs, 0.009 m., 0.012 m. Interspaces, 0.03 m., 0.031 m. Shaft, 0.0034 m. × 0.0038 m. and less, but increasing to 0.0055 m. square at transition. Advanced transition with disk at 0.055 m., gradual transition at 0.045 m. from respective nearest knobs. Traces of zigzag of short bent lines.

Discards similar to above (**Nos. 2596 ff.**): cleaned, two; uncleaned, one.

Group ii. All three knobs equal or nearly equal in size. (No ends preserved except possibly terminal of No. 2610.)

The following numbers are without rings at ends of knobs.

2605. Length, 0.357 m. Knobs, 0.009 m. Interspaces, 0.021 m., 0.015 m. Shaft, 0.0045 m. × 0.0043 m. and less. One stub rectangular, the other has gradual transition to round.

2606. Uncleaned. Length, 0.438 m. Knobs, 0.006 m. Interspaces, 0.021 m., 0.0215 m. Shaft, 0.0026 m. × 0.0028 m. Transitions at 0.05 m. and 0.053 m. from knobs, the one plain to rectangle with rounded corners (traces of beginning of screw-threading), the other gradual.

At either side of each ring a single knob.

2607. Length, 0.393 m. Knobs, 0.008 m. Interspaces, 0.012 m. Shaft, 0.0038 m. square and less. On one side rectangular to break, on the other, gradual transition to round.

On shaft adjacent to ends of knobs, two grooves, which with notch form two low rings.

2608. Length, 0.328 m. Knobs, 0.0085 m. Interspaces, 0.0135 m., 0.012 m. Shaft, 0.0045 m. square and less. On one stub, plain but not abrupt transition; the other stub is rectangular to break. In interspaces, a single line of engraving along each edge.

Single heavy ring at either side of each knob. Knobs angular but rather flat. Knob and ring form transition to form in which knob and ring are one piece in construction.

2609. Length, 0.463 m. Knobs, 0.012 m. Interspaces, 0.009 m., 0.015 m. Shaft, 0.007 m. square and less. On one stub, gradual transi-

[1] On four spits of this type in the Carapanos collection (from Dodona), all of which are straight, is passed a disk of analogous size. Disk on ornamented end, and rests against square basis. Holes in disks round, except one which is square.

tion to round; the other stub is rectangular to break.

Raised double ring at either end of each knob. Knobs similar to those of preceding number (**2609**).

2610. Terminal perhaps about complete. Length, 0.258 m. Knobs, 0.012 m. Interspaces, 0.018 m., 0.014 m. Shaft, 0.0065 m. × 0.006 m. and less, but increases to 0.01 m. square at transition. Transition advanced. After it, rectangular piece forming secondary transition, and round plain terminal. The other stub is rectangular to break. From a distance of 0.003 m. from break, incut 0.001 m. on two adjacent sides; purpose not clear.

Class β. Shaft rectangular.

Group i. Central knob largest.

Ordinary knobs with a single ring at either side of each. Arrangement from less to greater angularity.

2611. Length, 0.135 m. Knobs, 0.008 m., 0.01 m., 0.0085 m. Interspaces, 0.0335 m., 0.0315 m. Shaft, 0.0035 m. × 0.0033 m. and less.

2612. Length, 0.14 m. Knobs, 0.0095 m., 0.0165 m., 0.009 m. Interspaces, 0.0125 m. Shaft, 0.0045 m. × 0.0053 m. and less, but increases to 0.005 m. × 0.006 m. at transition. Advanced transition. Zigzag of bent lines throughout.

2613. Length, 0.186 m. Knobs, 0.009 m., 0.0175 m., 0.0095 m. Interspaces, 0.026 m., 0.029 m. Shaft, 0.0055 m. square at transition, elsewhere less. Advanced transition followed by short stub in which hole (diameter, 0.0028 m., depth, 0.01 m.) into which terminal (probably of iron) was inserted. Zigzag of bent lines throughout.

Addendum to Group i. The following piece is perhaps best put here.

2613 a. Uncleaned. Length, 0.083 m. Knobs, 0.007 m., 0.0125 m. Interspaces, 0.017 m. Shaft, 0.0035 m. × 0.0032 m. At either side of large knob and at inner end of one of the others, three raised rings. At either side of the other small knob, double ring. Original number of knobs uncertain.

Discards of Group i.: cleaned, one; uncleaned, four.

Group ii. Knobs of equal or nearly equal size.

(*a'*.) Blade end.

Ordinary knobs. No rings.

2614. Length, 0.105 m. Knobs, 0.008 m. Intervals, 0.017 m., 0.0185 m. Shaft, 0.005 m. square and less. Width of blade, 0.0065 m. Thickness, 0.003 m. Blade probably slightly longer originally.

(*b'*.) Ends gone.

Ordinary knobs. No rings.

2615. Length, 0.177 m. Knobs, 0.01 m. Interspaces, 0.003 m., 0.0028 m. Shaft, 0.0065 m. and less. Advanced transition with hole (diameter, 0.003 m. × 0.002 m.) in end containing stub of inserted bronze terminal.

At either side of each knob a single ring formed by enlargement of adjoining portions of shaft.

2616. Length, 0.146 m. Knobs, 0.0095 m., 0.01 m. Interspaces, 0.013 m., 0.0145 m. Shaft, 0.0052 m. square and less, but increases to 0.0063 m. square at transition. Advanced transition with disk, after which round terminal. Zigzag of bent lines throughout. Possibly more knobs originally.

Rings separated from knobs and adjoining portions of shaft by deep groove. Ordinary angular knobs.

2617. Length, 0.1825 m. Knobs, 0.0115 m., 0.012 m. Interspaces, 0.0335 m., 0.03 m. Shaft, 0.0065 m. square and less. Advanced transition with disk followed by stub of terminal. The other end has broken round surface at 0.031 m. from nearest knob.

Rings more advanced in that they are raised above the shaft. Independent of knobs, from which they are separated by a shallow groove. Cf. No. **2529**. Knobs slightly angular.

2618. Uncleaned. Length, 0.0715 m. Knobs, 0.015 m. Interspaces, 0.02 m. Shaft, 0.001 m. × 0.009 m. May have been part of rod or staff, but formally belongs here.

Form 3. Similar to Form 2, but sides of knobs are rectangular. Form 3: Form 2 = Form 1: plain round knob without groove at ends (not represented at Heraeum).

Shaft rectangular and round.

End.

2619. Length, 0.42 m. Knobs, 0.007 m. square, and 0.0075 m. × 0.008 m. (*bis*). Interspaces, 0.0385 m. and 0.04 m. Shaft, 0.0053 m. × 0.0057 m. and less. Nearest knob to end, 0.194 m.

Form 4. Knob similar to that of Form 2, but combined with rings to form an organic whole. Outer ends on rings abrupt, inside slopes inward toward base of knob. Groove deeper than line of shaft.

Shaft rectangular and round.

Plate CXXXII.

2620. Both ends gone. Length, 0.292 m. Knobs, 0.008 m., 0.0078 m., 0.0085 m. Interspaces, 0.0235 m., 0.026 m. Shaft, 0.0037 m. × 0.003 m. and less. Gradual transition to round. Corners of shaft beveled off in interspaces.

Form 5. Knob as in Form 2, but combined with rings to form an organic whole, which may be a separate piece. Cf. Form 5 of **Types b** and **c**.

Shaft rectangular and round.

Both ends gone.

2621. Length, 0.151 m. Knobs, 0.0105 m., 0.012 m., 0.011 m. Interspaces, 0.02 m., 0.021 m. Shaft, 0.0053 m. square and less. Abrupt but not advanced transition. Knobs with their rings probably separate pieces from shaft.

2622. Length, 0.503 m. Knobs, 0.018 m. Interspaces, 0.029 m., 0.023 m. Shaft, 0.005 m. square. Plain but gradual transition, marked by three engraved lines. Two or three lines also at each end of knobs (outside rings). Knobs and rings probably separate pieces from shaft.

Form 6. Advanced rounded knobs rising abruptly from shaft and divided by groove in centre so that each has the form of two broad rings. (Knobs and shaft of one piece.)

Shaft rectangular and round.

2623. Both ends gone. Length, 0.409 m. Knobs, 0.008 m., 0.0085 m., 0.008 m. Interspaces, 0.086 m., 0.085 m. Shaft, 0.0052 m. square and less. Gradual transitions.

Form 7. Advanced rectangular knobs rising abruptly from shaft.

Shaft rectangular and round.

Ends gone.

2624. Length, 0.468 m. Knobs, about 0.008 m. square. Shaft, 0.0055 m. square and less. Gradual transition. On each side of each knob, diagonal cross running from corner to corner. Engraved or struck with chisel.

Type e. Four knobs.

Ordinary developed knobs with rounded angles. Shaft grooved at either end of each knob. Adjoining portions of shaft emphasized so as to form rings. Similar to three-knob type, with central knob largest, except that between central knob and one of the smaller ones (that nearest small end) a still smaller knob is inserted.

Shaft rectangular and round.

2625. Both ends gone. Length, 0.197 m. Knobs, 0.009 m., 0.013 m., 0.005 m., 0.009 m. (reckoned from principal transition). Intervals, 0.0165 m., 0.01 m., 0.0065 m. Shaft, 0.004 m. square. Advanced transition at 0.045 m. from nearest knob, gradual at 0.025 m.

Addendum to **Type e**. The following piece probably had five knobs originally.

2626. End. Length, 0.243 m. Knobs, 0.0045 m.–0.0065 m. Shaft, 0.0037 m. square, increasing at transition to 0.005 m. × 0.0052 m. Advanced transition, ornamented with two grooves. After it, terminal ornamented with screw-threading.

Type f. Five knobs.

Angular or slightly rounded knobs with groove at each end. Emphasis of adjoining portion of shaft.

Shaft rectangular and round (except in incomplete fragments).

Group i. Knobs of three sizes, the largest being in centre and the two smallest at either side of central knob.

Ends gone.

(*a'*.) Smallest knobs slightly developed and but slightly larger than shaft.

2627. Length, 0.158 m. Knobs, 0.01 m., 0.005 m., 0.008 m. Interspaces, 0.005 m.–0.008 m. Small ring at either side of central knob. Elsewhere, emphasis. Transitions (about equidistant from knobs), the one gradual, the other advanced. The latter is followed by ornamented round terminal. Narrow zigzag of bent lines throughout rectangular part.

2628. Length, 0.139 m. Knobs, 0.011 m., 0.0063 m., 0.0065 m., 0.0085 m. Intervals, 0.009 m. Shaft, 0.004 m. square and less. Advanced transition followed by round terminal. Zigzag of bent lines throughout rectangular part.

2629. Length, 0.1485 m. Knobs, 0.01 m., 0.0047 m., 0.0075 m. Interspaces, interior, 0.0085 m.; exterior, 0.0075 m. Transitions advanced, with disk followed by ornamented terminal, and gradual. Throughout rectangular part zigzag of bent lines.

2630. Length, 0.162 m. Knobs, 0.01 m.,

0.0047 m., 0.0075 m. Interspaces, interior, 0.075 m., 0.06 m.; exterior, 0.0055 m. Shaft, 0.004 m. and less. Gradual transition preserved, the other was probably advanced. Traces of zigzag of bent lines.

Discards similar to Nos. 2629 f.; uncleaned, one.

(b'.) Interior knobs developed. Rings.

2631. Length, 0.368 m. Knobs, 0.0165 m., 0.012 m., 0.0115 m., 0.0125 m., 0.0115 m. Intervals, interior, 0.017 m., 0.0185 m.; exterior, 0.0215 m., 0.0225 m. Shaft, 0.0067 m. × 0.0065 m. at transition. Advanced transition followed by ring and round stub. On all sides zigzag of bent lines.

Group ii. Central knob largest. Smaller knobs of uniform size.

No ends preserved. Arrangement toward angularity.

2632. Length, 0.219 m. Knobs, 0.0175 m.; 0.011 m., 0.0115 m.; 0.01 m. Interspaces, 0.0235 m. (interior), 0.018 m., 0.017 m. (exterior). Shaft, 0.0065 m. square and less, increasing to 0.0068 m. square at transition. Advanced transition.

2633. Length, 0.28 m. Knobs, 0.0195 m.; 0.011 m., 0.012 m. Intervals, 0.031 m., 0.029 m. (interior), 0.0225 m., 0.023 m. (exterior). Shaft, 0.008 m. square and less. Advanced transition followed by round stub. On all sides zigzag of bent lines.

2634. Length, 0.232 m. Knobs, 0.021 m.; 0.011 m.–0.012 m. Interspaces, 0.034 m., 0.0325 m. (interior), 0.022 m., 0.024 m. (exterior). Shaft, 0.006 m. square and less. Advanced transition.

Addenda to **Type f.** The following fragments with three and four knobs may be put here owing to their similarity to the better preserved specimens of the type.

(a'.) Similar to Group i., (a').

Similar to Nos. 2627 ff.

2635. Three knobs. Length, 0.0915 m. Traces of zigzag of bent lines.

2636. Four knobs. Length, 0.132 m.

Similar to Nos. 2629 f.

2637. Three knobs. Length, 0.0975 m. Advanced transition followed by stub of round terminal. Broad but close zigzag of bent lines throughout rectangular part.

2638. Three knobs. Length, 0.088 m. Slight traces of zigzag of bent lines.

The following is similar to Group i., (b').

2639. Four knobs. Length, 0.304 m. Advanced transition with two grooves, followed by round terminal. Slight traces of narrow zigzag on rectangular part.

2640. Three knobs. Length, 0.087 m. Fine zigzag of bent lines.

(b'.) Similar to Group ii.

2641. Three knobs. Length, 0.357 m. Gradual transition.

2642. Four knobs. Length, 0.11 m.

2643. Four knobs. Length, 0.137 m. On all sides, fine zigzag of bent lines.

(c'.) The following fragment probably had seven or more knobs originally. Shaft rectangular. Angular knobs with a single ring at either end of each.

2644. Four knobs. Length, 0.2345 m. Knobs, 0.0225 m., 0.015 m., 0.0135 m. (*bis*). Interspaces, 0.031 m., 0.0325 m., 0.0425 m. Shaft, 0.0075 m. square and less. On all sides, zigzag of bent lines.

Addenda to **Types a–f.** (a'.) Ends.

Plain, pointed.

2645. Uncleaned. Length, 0.275 m. Ring followed by rectangular part (length, 0.029 m.), after which round. Gradual transition.

Discard similar to No. 2645: uncleaned, one.

Plain, blunt without cap.

2646. Length, 0.14 m. Round.

Plain, blunt with cap.

2647. From West Building. Length, 0.196 m.

Discards similar to No. 2647: cleaned, one; uncleaned, four.

Advanced. Simple terminal. Plain, blunt.

2648. Length, 0.053 m.

Discard similar to No. 2648: one.

Ornamented, somewhat advanced terminal pieces.

Simple screw-threading.

2649. Uncleaned. Length, 0.129 m.

Double screw-threading, changing to single near end.

2650. From West Building. Length, 0.167 m.

Plain sections separated by simple threading or grooves (three to six).

2651. Uncleaned. Length, 0.071 m. Six plain sections, besides end.

Convex sections separated by a single ring. Sections short.

2652. Uncleaned. Length, 0.063 m. Ten sections.

2653. Uncleaned. Length, 0.1035 m. Eleven sections.

2654. Uncleaned. Length, 0.1625 m. Fifteen sections.

Discard similar to above (Nos. 2652 ff.): uncleaned, one. Eight sections.

Convex sections separated by two rings. Sections long.

2655. From West Building. Probably incomplete at end. Length, 0.1125 m. Four sections.

Similar but with short sections.

2656. Incomplete. Length, 0.52 m. Five sections.

2657. From south slope. Length, 0.122 m. Fifteen sections.

2658. From West Building. Incomplete. Length, 0.063 m. Six sections.

Convex sections separated by three rings. Sections short.

2659. Length, 0.175 m. Eleven sections.

2660. Length, 0.15 m. Twelve sections besides short initial section.

Discards similar to Nos. 2659 f.: cleaned, one; uncleaned, three.

Convex sections separated by two, three, and four rings. Sections long.

2661. From West Building. Length, 0.131 m. Six sections. First two sections separated by four rings, last two by two, the others by three.

Convex sections separated usually by four rings. Sections short.

2662. Length, 0.175 m. Twelve sections. Between first two sections one ring, between last five, elsewhere four.

Convex sections separated by five rings usually. Sections short.

2663. Length, 0.099 m. Eight sections. At end, bunch of rings (number uncertain) and cap. Between last two sections, screw-threading equivalent to about six rings.

Discard similar to above: uncleaned, one.

Convex sections (short) separated by four, five, and six rings.

2664. From back of South Building. Length, 0.1163 m. Eight sections. First four groups of rings have six each, the next two five each, and the last four.

Convex sections (short) separated by four, five, six, seven, and nine rings.

2665. Length, 0.133 m. First group of rings numbers seven, the second nine, third, fourth, and sixth six each, the seventh four, the eighth six or seven, and the fifth five.

The following number could also be regarded as a pin.

Terminal piece, the latter part of which has two convex surfaces separated by plain space. At either side of surfaces, rings.

2666. Incomplete. Length, 0.0905 m. First convex section preceded by three rings and followed by one, the second is preceded by two and followed by two plus cap.

(b'.) Neither end preserved.

Plain and simple.

2667. Length, 0.235 m. Gradual transition.

2668. Length, 0.668 m. Gradual transition.

2669. From West Building. Length, 0.523 m. Gradual but plain transition.

Discards similar to above (Nos. 2667 ff.): cleaned, two; uncleaned, fifty.

More advanced. Transition piece.

2670. Length, 0.074 m. Easy but plain transition followed by piece of round end which is ornamented with coarse screw-threading.

Advanced transitional pieces. Ordinary.

2671. Length, 0.1005 m. Two lines engraved at transition and four on shaft arranged in pairs.

Discards similar to No. 2671, but plainer: cleaned, two; uncleaned, five.

Advanced transition consisting of heavy ring with rounded sides.

2672. Uncleaned. Length, 0.105 m., of which 0.092 m. belongs to terminal. Terminal rectangular so far as preserved.

One knob and ring of another knob. Shaft rectangular.

2673. Length, 0.19 m. Rings double.

Discards (uncleaned): fragments with single knob, forty-five; fragment with two knobs, one; fragments with single knob, which are perhaps better regarded as straight pins (**Type k**), twenty-six; uncertain, one.

Knob only.

PLATE CXXXIII.

2674. From south slope. Length, 0.026 m. Diameter, 0.022 m. Heavy ring on one side, lighter on the other.

Bronze knob on iron shaft. Knobs rounded without rings. Shafts of uncertain shape, probably rectangular.

2675. Uncleaned. Length, 0.024 m. Diameter of knob, 0.015 m. Shaft, 0.006 m. square.

2676. Uncleaned. Length, 0.038 m. Knob, 0.013 m. Shaft, 0.006 m.

2677. Length, 0.261 m. Knob, 0.019 m. Shaft, 0.005 m.

(*c'*.) Shafts so twisted or bent as to suggest decorative or other purpose, which is, however, in no case certain.

Knotted or braided. No knobs.

2678. Uncleaned. Preserved end pointed. Bent into shape of ellipse the sides of which are formed by a double coil with its strands twisted about each other. Length, about 0.35 m. Shaft, 0.001 m. × 0.0013 m. Rectangular and round.

2679. Uncleaned. Preserved end blunt. Complex knob near centre with single loop at each end, one loop being larger than the other. Length as bent, 0.099 m. Rectangular and round (size, 0.0016 m. × 0.0018 m.).

Discards similar to Nos. **2678** f., but simpler: uncleaned, four.

Ends twisted so as to form one large loop. One knob.

2680. Spit of **Type b**, Form 2, *Class a*, (*a'*). Length, 0.185 m. Knob, 0.019 m. × 0.017 m. Shaft, 0.0012 m. × 0.001 m. and less. Gradual transitions. Twisted purposely, perhaps to fasten.

Looped shafts, possibly decorative. No knobs.

2681. Both ends gone. Length, 0.092 m. Shaft round. Thickness, 0.0018 m. × 0.0016 m. and less. Small loop with returning end.

2682. Uncleaned. Length as bent, 0.025 m. Shaft rounded. Thickness, 0.0017 m. × 0.0015 m. Two narrow loops with returning ends.

2683. Uncleaned. Length as bent, 0.10 m. Shaft partly rectangular, partly rounded. Thickness, 0.0024 m. × 0.0023 m. At one end, double loop with returning end.

The following types are related to the preceding by analogies of form.

Type g. Knob represented by flattening of shaft.

Class α. Shaft rectangular from one end of flat part and round from the other.

2684. Uncleaned. Ends gone. Length, 0.132 m. Shaft, 0.004 m. × 0.0045 m. (flattened to 0.0075 m. × 0.0018 m.). About half of shaft round.

Class β. Shaft rectangular from both ends of flat part.

2685. Uncleaned. Ends gone. Length, 0.055 m. Shaft, 0.004 m. × 0.0035 m. (at flat part, 0.0065 m. × 0.004 m.).

Class γ. Shaft round.

2686. Uncleaned. End. Length, 0.1165 m. Shaft, 0.0028 m. × 0.0025 m. (flattened to 0.0035 m. × 0.001 m.).

Discard: uncleaned, one.

Type h. Head at one end. Single knob. Elongated knob with rounded sides. Shaft rectangular, with corners slightly rounded. Slightly grooved on side of knob toward point.

2687. Uncleaned. Length, 0.12 m. Knob, 0.003 m. Shaft, 0.002 m. × 0.0015 m. Head, 0.0025 m. × 0.002 m. Somewhat similar to simplest form of pins.

Type i. Head at one end resembling knob. Composite shaft, rectangular, with round part inserted.

2688. From south slope. Other end gone. Length, 0.16 m. Head, 0.011 m. Jacket, 0.0085 m. × 0.007 m. Split for 0.0555 m. where round is inserted. At lower end, four engraved lines. Much more oxidized than round part.

Type j. Blade at one end of shaft, and perhaps blunt round terminal at the other. No knob.

Form 1. Shaft not solid but formed by folding together a narrow thin strip.

Class α. Folded so as to form a small tube. Edges do not form straight line. Sometimes they overlap.

Ends. Flattened to form blades.

2689. Length, 0.074 m. Thickness, 0.0024 m. Width of blade, 0.0035 m.

2690. Uncleaned. Length, 0.126 m. Thickness, 0.0038 m. and less. Width of blade, 0.004 m.

Both ends gone.

2691. Uncleaned. Length, 0.0317 m. Thickness, 0.002 m. and less.

2692. Length, 0.1525 m. Thickness, 0.0024 m. and less.

2693. Length, 0.079 m. Thickness, 0.0028 m.

2694. Uncleaned. Length, 0.041 m. Thickness, 0.0034 m.–0.002 m.

2695. Uncleaned. Length, 0.074 m. Thickness, 0.004 m. and less.

Discards similar to the above (Nos. **2691** ff.): uncleaned, two.

Class β. Edges folded in and brought close together, the hollow between the two rolls taking the place of tube.

One end blade-shaped, the other blunt and round.

2696. From south slope. Possibly not complete. Length, 0.087 m. Thickness, 0.0025 m. × 0.0015 m. Width of blade, 0.0027 m.

2697. Uncleaned. Possibly not complete. Length, 0.483 m. Thickness, 0.0025 m. and less. Width of blade, 0.0035 m.

Both ends gone.

2698. Uncleaned. Length, 0.242 m. Thickness, 0.0025 m. × 0.0018 m.

Discards similar to No. **2696**: uncleaned, three.

Form 2. Solid shaft, rounded. Blade double.

Blade ends only.

The following have both parts of blade in the same plane.

2699. Uncleaned. Length, 0.424 m. Thickness, 0.002 m. Length of blade, 0.011 m. + 0.0115 m. Width, 0.003 m. and less.

2700. Uncleaned. Length, 0.07 m. Thickness, 0.003 m. and less. Length of blade, 0.011 m. + 0.011 m. Width, 0.0049 m. and less. End has sides rounded to point.

2701. Uncleaned. Length, 0.063 m. Thickness, 0.003 m. Length of blade, 0.01 m. + 0.009 m. Width, 0.0075 m. and less. Near centre of first part, round hole (diameter, 0.001 m.).

Both parts of blade in planes which are at right angles to each other.

2702. Uncleaned. Length, 0.084 m. Thickness, 0.004 m. and less. Length of blade, 0.027 m. Width, 0.005 m.

Type k. Solid rounded shaft (without knob), one end of which terminates in blade which is not set in same plane with shaft.

End.

2703. Uncleaned. Length, 0.1365 m. Shaft, 0.0017 m. Use uncertain.

Type l. Similar but straight. Slight knob or convex surface near beginning of blade. Shaft round except near blade.

2704. Found in first chamber at east end on lower terrace, April 28, 1893. Probably incomplete at other end. Bent. Length, 0.115 m. Knob, 0.0032 m. Shaft, 0.0023 m. to 0.0017 m. Length of blade, 0.008 m. + 0.018 m. Width, 0.0052 m. and less. Rectangular part ornamented with grooves and fine lines. Use uncertain. Perhaps a medical instrument.

Type m. Plain shafts without knob, terminating at one end in hook or loop. The other end in the only case preserved is a flat point.

Class α. Rectangular shaft.

2705. Uncleaned. Other end gone. Length, 0.19. Thickness, 0.0015 m. × 0.0013 m. Loop, 0.008 m. × 0.0055 m.

Class β. Rounded shaft.

2706. Probably complete. Length, 0.335 m. Shaft, about 0.0036 m. Diameter of loop, 0.012 m.

Only loop end preserved.

2707. Length, 0.176 m. Thickness, 0.0017 m. Loop, 0.0115 m. × 0.007 m.

2708. From back of South Building. Length, 0.086 m. Thickness, 0.0023 m. Loop, 0.008 m. × 0.007 m.

2709. Uncleaned. Length, 0.102 m. Thickness, 0.0037 m. Loop, 0.021 m. × 0.009 m.

2710. Length, 0.349 m. Thickness, 0.006 m. Loop, 0.02 m. × 0.006 m.

Addendum. Irregularly elliptical shaft with closed loop. Resemblance to this type perhaps accidental.

2711. From back of South Building. Length, 0.05 m. Shaft, 0.0017 m. × 0.0013 m. Loop, 0.0055 m. × 0.003 m. Differs from the others in having loop closed with end protracted.

Type n. Terminal follows knob. Single knob, angular, with groove at either end. (Probably better regarded as spits than as straight pins, e. g. of **Type d.**)

Class α. Rectangular terminals.

2711 a. Uncleaned. Length, 0.165 m. Knob, 0.0035 m. Shaft, 0.002 m. square. Length of terminal, 0.0255 m.

2711 b. Uncleaned. End of shaft gone. Length, 0.14 m. Knob, 0.0075 m. Length of terminal, 0.0455 m. Ends in round knob (diameter, 0.003 m.).

2711 c. Uncleaned. Fragment of terminal. Length, 0.033 m. More advanced than the preceding number.

2711 d. Fragment of terminal. Length, 0.055 m. Size at break, 0.0018 m. × 0.002 m. Base, 0.0075 m. × 0.007 m. Interior rectangle set (perhaps inserted) diagonally to outer. The triangular corners thus left project slightly.

Class β. Round terminal.

2711 e. End incomplete. Length, 0.055 m. Diameter, 0.003 m.–0.008 m. Tapers concavely. Heavy ring at base.

Discard of Class β: uncleaned, one.

8. SPEAR-BUTT.

2712. Broken at large end. Length, 0.115 m.

Bronze shell (thickness, 0.001 m.–0.002 m.). with iron filling to depth of 0.04 m. Remainder of filling probably bronze. Near molding at lower end, incised line (probably cast).

Cf. Nat. Mus., Athens, No. 6866 (Acropolis).

9. PESTLE OR PLEKTRON.

2713. Uncleaned. Length, 0.115 m. Round shaft terminating at one end in molding, at the other in swelling. Thickness, 0.0034 m., increasing toward end to 0.0054 m. Decoration of head: convex surface with double ring beneath and single ring and cap above. Length of head, 0.017 m.

10. HOOKS.

A. FREE.

Type a. End of shaft turns up.

Class α. Plain handles.

2714. Uncleaned. Length, 0.07 m. Length of handle, 0.022 m.

Class β. Handle has eyelet at end.

2715. From upper terrace. Length, 0.283 m. Eyelet formed by flattening and bending back handle. Width of shaft, 0.0076 m. and less. Thickness, 0.0045 m., decreasing toward point, where it is 0.001 m.

Addenda to **Type a.** It is uncertain whether any of the following are hooks, but they bear a general resemblance in form.

2716. Condition poor, but probably about complete. Bent. Length, 0.155 m. Handle (length, 0.052 m.), shaft, and hook. Entire object could be regarded as a handle.

2717. Long end may be incomplete. Length, 0.146 m. Shaft partly rectangular, but mostly round. Thickness, 0.0045 m. and less.

2718. Long end broken. Length, 0.0775 m. Shaft irregularly rectangular. Thickness, 0.0045 m. square and less.

2719. Uncleaned. Broken at both ends. Length, 0.057 m. Shaft, 0.0065 m. × 0.0057 m. and less.

The following have hook at only a slight angle (obtuse).

2720. Uncleaned. Length, 0.16 m. Length of handle, 0.049 m. Shaft round. Diameter, 0.0045 m. and less. End pointed.

2721. Uncleaned. Both ends broken. Length, 0.085 m. Handle, 0.0035 m. square at beginning. Passes gradually to round and tapers toward end.

Type b. Shaft straight. No hook.

2722. End of handle as though hacked off with chisel. Length, 0.54 m. Length of handle, 0.129 m. Width, 0.026 m.–0.015 m. Thickness, 0.004 m. and less. Width of blade, 0.014 m.–0.01 m. Thickness, 0.007 m.–0.003 m. Decoration at beginning of handle and on one side only. Zigzag bounded on outer side by two straight lines. Between lines, faint diagonal line. Outside lines to break, short parallel lines along each edge.

B. ATTACHED.

All examples belong to one type.

Class α. Shaft rectangular and round.

2723. Uncleaned. Length, 0.084 m. Shaft, 0.0032 m. × 0.0035 m. Length of hook, 0.018 m. Gradual transition to round at elbow.

Discard similar to No. **2723**: one.

2724. Uncleaned. Hook damaged. Length, 0.105 m. Shaft, 0.001 m. × 0.005 m. and less. Near elbow, passes to round. Length of hook, 0.015 m. Forms obtuse angle with shaft. Possibly not a hook.

Class β. Rectangular shaft.

2725. Length, 0.143 m. Shaft, 0.0043 m. × 0.0053 m. and less, decreasing toward point. Length of hook, 0.012 m.

2726. Length, 0.153 m. Shaft, 0.006 m. square near elbow, from whence decreases toward blunt point. Length of hook, 0.016 m. Size, 0.006 m. × 0.0065 m. at top, decreasing toward elbow.

2727. Both ends damaged. Length, 0.112 m. Shaft, 0.0045 m. × 0.005 m., tapering toward point. Length of hook, 0.02 m. Flat surfaces lie in diagonal planes, giving effect of section of a diamond.

Addendum to β. Uncertain whether the following is a hook or not.

2728. Both ends damaged. Length, 0.177 m. Shaft, 0.007 m., decreasing to 0.0038 m. at end. Length of hook, 0.03 m. Decreases in size from 0.0065 m. (elbow) to 0.0015 m. (point).

Discards: probably rather ends of spits than hooks: cleaned, two; uncleaned, one.

11. NAILS.

All the certain specimens have heads. Such as do not are classed as "*Addenda*."

Type a. Small, thin, flat head. Shaft round.

(*a'.*) End pointed.

2729. Length, 0.118 m. Diameter of head, 0.008 m.; of shaft, 0.0063 m. Rectangular point.

(*b'.*) End blunt and flat.

2730. Uncleaned. Length, 0.0735 m. Diameter of head, 0.0088 m.; of shaft, 0.0065 m. End, 0.006 m. × 0.0039 m.

Cf. two plain round nails from Mycenae (shaft-grave v, No. 842), with plain, small, flat heads and shaft that tapers to blunt point.

(*c'.*) End gone (hence pieces may be rivets).

2731. Length, 0.116 m. Head somewhat convex. Diameter, 0.0069 m. Diameter of shaft, 0.0065 m.

2732. Length, 0.112 m. Diameter of head, 0.0215 m.; of shaft, 0.014 m. and less.

Cf. nails from Mycenae, especially example cited s. n. **2730.**

Discards of (c'): uncleaned, two.

Type b. Round thick head. Flat top.

Shaft rectangular.

2733. End gone. Length, 0.077 m. Diameter of head, 0.02 m. Thickness, 0.0025 m. Shaft, 0.006 m. square near head, elsewhere less. Uncertain whether head and shaft are of one piece.

Type c. Round thick head. Rounded top.

Shaft round.

2734. End gone. Length, 0.048 m. Diameter of head, 0.018 m. Thickness, 0.004 m. Diameter of shaft, 0.0055 m. and less.

2735. End gone. Length, 0.045 m. Diameter of head, 0.0195 m. Thickness, 0.0055 m. Diameter of shaft, 0.0048 m. near head, elsewhere less. Head of two parts, the inner rectangular, the outer round. Inner part of same piece with shaft. Size, 0.006 m. square on under side, 0.0067 m. × 0.007 m. on upper.

Shaft round and rectangular.

2736. End gone. Length, 0.04 m. Diameter of head, 0.021 m. Thickness, 0.003 m. Shaft round in upper part. Abrupt transition. Size of rectangular part, 0.003 m. × 0.004 m. Flattens toward break.

The following number is of uncertain use.

2737. Length, 0.038 m. Diameter of head, 0.015 m. Thickness, 0.003 m. Shaft round. Diameter, 0.0037 m. and less. Flattens in lower part. Was probably inserted and fastened by rivet which passed through hole at end. Shaft terminates in rectangle (0.006 m. × 0.0065 m.), which projects slightly on under side of head. Remainder of head perhaps a separate piece.

Type d. Round thick head. Conical top (undeveloped).

Rectangular shaft.

2738. End injured. Length, 0.133 m. Diameter of head, 0.02 m. Thickness, 0.002 m.–0.005 m. Slightly concave on under side. Shaft, 0.005 m. and less.

2739. Broken near head. Diameter of head, 0.0215 m. Thickness, 0.0065 m. at centre, decreasing to edge. Under side flat. Groove near outer edge of top side.

Cf. *Olympia*, No. 1210 (hammered). According to Furtwängler, one example was found under the Heraeum in Olympia.

Type e. Solid round head resembling angular knob with grooved shaft.

Shaft rectangular.

2740. End gone. Length, 0.101 m. Diameter of head, 0.015 m. Top a smooth rectangular surface. Shaft, 0.0064 m. × 0.007 m. and less.

Type f. Solid cubical head.

Shaft round.

2741. Uncleaned. End incomplete. Condition poor. Length, 0.08 m. Head, 0.0085 m. square. Thickness, 0.007 m. Shaft, 0.006 m. and less.

2742. Uncleaned. End gone. Condition poor. Length, 0.092 m. Head, 0.009 m. square on top and 0.007 m. at bottom. Thickness, 0.007 m. Shaft, 0.0065 m. × 0.0055 m. and less.

Type g. Hollow round head with convex top.

Nail-shaft of iron.

2743. Short stub only of shaft remains. Diameter of head, 0.0285 m. Shaft, 0.007 m. × 0.0085 m. Inserted into bronze socket which reaches to under side of head.

2744. Short stub only of shaft remaining. Diameter of head, 0.0475 m. Shaft, 0.007 m. × 0.008 m. Inserted into low socket on under side of head.

Cf. *Olympia*, No. 1214. Iron nail.

Type h. Round hollow head with conical top.

Cf. gold tacks with rounded head from Mycenae (shaft-grave IV, Mus. Nos. 359, 371) and from Heraeum tomb, No. 3317; also bronze nails from Mycenae (not from shaft-graves), No. 2892, and from shaft-grave III, No. 49. The last has conical head and is employed to hold together rosettes. All the above in Nat. Mus., Athens.

Plain.

2745. Shaft broken close to head. Diameter of head, 0.0227 m. Thickness of head, 0.008 m. Shaft stub, 0.0065 m. in diameter. What remains looks more like bottom of a socket the sides of which have been broken down. Remainder of shaft may therefore have been of iron.

2746. Shaft incomplete. Sides of head crushed flat. Length, 0.0525 m. Diameter of head, 0.012 m. Thickness, 0.012 m. Diameter of shaft, 0.0018 m. and less.

2747. From West Building. Shaft gone. Diameter of head, 0.0175 m. Thickness, 0.009 m. On under side, hole (diameter, 0.0015 m.) for insertion of shaft.

Ornamented.

2748. Shaft incomplete. Head in poor condition. Length, 0.107 m. Diameter of head, 0.034 m. Thickness, 0.036 m. At 0.004 m. and 0.009 m. from top of head narrow raised encircling bands. Near lower edge, shallow groove. Inside about two thirds filled with bronze and another substance (perhaps lead) to hold shaft. Shaft, 0.004 m. × 0.005 m. and less.

PLATE CXXXIV.

2749. Shaft incomplete. Length, 0.10 m. Diameter of head, 0.062 m. Thickness, 0.035 m. Narrow raised bands near top and at bottom of cone and at top and bottom of outer edge. Surface of top slightly concave, of outer edge convex. Inside of cone half filled with bronze and perhaps a little lead (see No. **2748**) for insertion of shaft. Shaft rectangular (0.0055 m. × 0.006 m.) at first, afterwards round.

Cf. *Olympia*, No. 1220.

PLATE CXXXIV.

2750. About one third of flange gone. Shaft incomplete, and bent. Length, 0.148 m. Diameter of head, 0.063 m. Thickness, 0.062 m. Shape and decoration similar to that of No. **2749**. Shaft, 0.006 m. × 0.005 m. and less. Held in place by melted bronze.

Cf. nail from Necropoli del Fusco, *Notiz. degli Scavi*, 1893, p. 456.

Addenda to **Types a–h**. The following shafts probably had heads originally, but their form is uncertain. Possible that some are ends of spits.

(*a'*.) Round shaft.

Ends originally pointed, now rather blunt.

PLATE CXXXIII.

2751. Length, 0.104 m. Diameter, 0.006 m. and less.

2752. Length, 0.11 m. Diameter, 0.0085 m., decreasing toward flat point.

Ends blunt.

2753. Length, 0.058 m. Thickness, 0.0078 m. × 0.0087 m., decreasing toward end.

2754. Length, 0.134 m. Thickness, 0.008 m. × 0.007 m. at top, passing immediately to round and tapering toward end. Top smooth and possibly original.

Both ends gone.

2755. Length, 0.098 m. Thickness, 0.01 m. × 0.011 m. and less.

(*b'*.) Rectangular shaft.

End originally probably pointed, now blunt.

2756. Length, 0.136 m. Size, 0.007 m. square, tapering toward end.

The following types are ornamental, and, with the exception of the first (**Type i**), of uncertain use and application.

Type i. Ornamental head developed from cone of Type h. No shaft.

PLATE CXXXIV.

2757. Injured at top and bottom, but practically complete. Length, 0.102 m. Diameter of bottom, 0.0685 m.; of top, 0.007 m. Lower edge preserved to depth of 0.006 m. in places. Flares outward. Under side hollow, but greater part of cone is solid. Ornamented with grooves, rings, and convex surface as in PLATE.

Cf. De Ridder, *Bronzes de l'Acropole*, No. 385.

PLATE CXXXIII.

Type j. Ornamental composite head.

2758. From back of South Building. Height, 0.024 m. Diameter of bottom, 0.0405 m.; of top, 0.018 m.; of waist of shaft, 0.01 m. Bottom smooth and slightly concave. Thickness of edge, 0.002 m. In centre, hole, 0.019 m. across and 0.006 m. deep. In top, hole, 0.01 m. × 0.0085 m. across and 0.0035 m. deep, into which another section may have been fastened.

Cf. Nat. Mus., Athens, Nos. 7185, 7190, 7191, 7193, which are similar, and No. 7189, which has flat top (all from Acropolis). *Olympia*, No. 1224, has hole clear through.

Type k. Ornamental globular heads attached to round shaft.

Class a. Plain shaft.

PLATE CXXXIV.

2759. End gone. Bent (uncertain whether of original design). Length, 0.095 m. Diameter of head, 0.013 m.; of shaft, 0.0065 m.

2760. Shaft incomplete. Length, 0.039 m. Diameter of head, 0.027 m.; of shaft, 0.0085 m. and less. Head represents bud or fruit.

Cf. *Olympia*, No. 1183 (apple on stem).

Class β. Shaft ornamented with heavy screw-threading.

2761. Shaft incomplete. Length, 0.05 m. Diameter of head, 0.024 m. Flat on top. Shaft (0.006 m. × 0.007 m.) inserted into under side.

Addendum to Class β. Headless shaft.

2762. Neither end complete. Length, 0.078 m. Diameter, 0.0065 m.

Type l. Elongated ornamental head with hole in end.

2763. Shaft which probably was of iron entirely gone. Length, 0.0465 m. Diameter at top and bottom rings, 0.013 m.; at centre, 0.02 m. Above top ring, extension with groove on each narrow side. Diameter of hole, 0.0025 m. In bottom, hole (diameter, 0.0045 m.; depth, 0.0039 m.). From hole grooves radiate to outer edge. General appearance, especially of hole, favors classification here rather than as pin-head.

Object of somewhat similar appearance from Megara Hyblaea published by Orsi, *Mon. Ant. Linc.* I. col. 828, as a pendant. Not stated whether object has hole in bottom.

Type m. Ornamental head representing flower.

2764. Uncleaned. Shaft gone. Condition poor. Length, 0.027 m. Consists structurally of three parts (though all are of one piece). Upper part (length, 0.017 m.; sides, 0.009 m. square) has four slightly flaring petals, one at each corner. On outside of each petal, a smaller petal. Between petals, bud-like centre extending to top. In top, slight hole. Middle section (length, 0.005 m.; sides, 0.009 m. × 0.01 m.) has two grooves (or three raised bands). Lower section (diameter, 0.008 m.) has small hole in bottom for insertion of shaft and two grooves about side.

12. BUTTON.

2765. About one third of head gone. Diameter, 0.0185 m. Length, 0.003 m. Thin rounded head. In centre of under side, heavy eyelet (diameter of hole, 0.001 m.).

Cf. button from uncleaned scraps from Acropolis now in Nat. Mus., Athens. Similar buttons from Villa Benvenuti near Este found in cist-grave of iron age: Montelius, *Civ. Prim. It.* Text, col. 292, fig. e. Likewise from Este: Ghirardini, *Mon. Ant. Linc.* VIII. col. 27, pl. I. No. 31. In *Villa Papa Giulio*, § xxxv. (Rome), many bronze buttons, very similar, with eyelets underneath.

Discard: uncertain, one.

13. FASTENERS.

A. WIRE.

2766. Band damaged. Length of wire, about 0.255 m. Size, 0.0015 m. × 0.0013 m. and less. Rectangular. Band, 0.027 m. × 0.023 m. Small repoussé dots about edge, and two or three rows in interior running lengthwise. At present, band encircles only one end of wire.

2767. From Old Temple. Ends probably incomplete. Length at present, 0.062 m. Wire, 0.0022 m. × 0.0014 m. (diamond-shaped section with obtuse angles softened). Irregular coil, from which proceed two arms on one side and one on the other. Their ends meet and are twisted about each other. Two pieces of wire, of which one forms the single arm and one of the pair.

Place of coil taken by bronze disk.

2768. None of the ends complete. Length, 0.059 m. Wire, 0.0027 m. × 0.0015 m. near disk, decreasing toward ends. Section as in No. **2767**. Disk (diameter, 0.0205 m.) has row of small dots about edge convex side uppermost. Rivet holds at back of disk three pieces of wire one on top of the other, passing through flattened ends of two and middle of the third.

Addendum. The following disk may have similar value to that of No. **2768**.

2769. (Shows under side.) From back of South Building. Uncertain how much is lost. Diameter, 0.016 m. Thickness, 0.0015 m. On top, close to edge, groove. In centre, hole (0.0045 m. × 0.002 m.) from which bar (0.0015 m. × 0.0017 m.) projects 0.005 m. At back, bar seems to spread and hold wire in place.

B. CHAIN.

2770. From West Building. Uncertain whether and to what extent incomplete. Length, 0.038 m. Four links of horseshoe shape made of round wire and open at small end.

The following object is put here on the supposition that there were originally more links.

2771. Length, 0.0225 m. Rectangular and round wire. Tapers nearly to point at end of

larger loop — an objection to making this object a link of a chain.

C. EYELET OR HINGE.

2772. Both ends probably incomplete. Length, 0.0925 m. Two bars terminating in interlocked closed eyelets. Bar of eyelets rectangular (0.0065 m. × 0.0025 m.), of shafts rounded rectangular.

14. CLAMPS.

2773. One cleat on under side broken off close to bar. Length, 0.09 m. Width of bar, 0.01 m.–0.0215 m. Thickness, 0.0025 m.–0.008 m. On under side at 0.018 m. from one end, and 0.028 m. from the other, small cleat.

2774. Length, 0.102 m. Thickness, 0.0045 m.–0.0067 m. On under side near each end (0.012 m., 0.009 m.), cleat. Height of each, 0.0135 m. Width, about 0.014 m. Thickness, 0.004 m. and 0.007 m.

2775. Length, 0.10 m. Width of bar, 0.039 m. and less. Thickness, 0.004 m.–0.007 m. Height of cleats, 0.013 m.

Hole in ends makes identification as clamp uncertain.

2776. (Shows under side.) One end probably incomplete. Length, 0.06 m. Width, 0.035 m. and less. Thickness, 0.0038 m. and less. Near one end, hole (diameter, 0.0075 m.). Groove on top nearly at right angles to sides.

15. CAPS.

2777. From back of South Building. Defective. Diameter, 0.077 m. Height, 0.026 m. and less. Upper edge bent slightly outward in parts.

2778. Defective. Condition poor. Sides bent flat against bottom. Diameter, 0.0717 m. Height of sides, 0.0115 m. and less.

2779. Found in South Stoa, April 24, 1895. Height, 0.06 m. Diameter, 0.077 m. and less. Thickness of sides, 0.007 m. and less. Near top, bronze rivet from side to side. On outside near top, shallow groove.

Different from Schliemann, *Tiryns*, p. 281, No. 120.

The following with ear or ears at side is probably to be put here.

2780. (Shows under side.) Defective. Height, 0.01 m. + 0.005 m. Diameter, 0.028 m. On one side of top, ear (width, 0.01 m. Length, 0.006 m.). At base, hole (diameter, 0.003 m.).

The following objects of uncertain classification probably had similar use.

2781. From back of South Building. Defective. Diameter, 0.048 m. Toothed edge. In centre, convexity with hole (diameter, 0.005 m.). On same side, leaf pattern, at base of teeth and about centre.

2782. Perhaps from northeast corner of Old Temple. About complete. Height, 0.021 m. Diameter, 0.024 m. (top), 0.045 m. (bottom). Neck (length, 0.006 m.), beneath which, convex lower part. Perhaps coating of end of staff.

16. CENTREPIECE.

2783. Found back of South Building, 1894. Defective. Condition poor. Size, 0.053 m. Ends, 0.0115 m. square and less. Thickness of metal, 0.0015 m. Inside hollow. About ends on all sides except back, grooves, two about each end.

17. BINDING.

2784. From back of South Building. Ends broken. Length, 0.135 m.. Width, 0.048 m. and less. Consists of two parts: upper ribbed flange, inner line of which is broken. The second part (same piece with top); length, 0.068 m.; width, 0.0275 m.; thickness, 0.005 m. at junction with upper part, from which decreases toward rounded edge. Under side flat; forms acute angle with upper part. Doubtful whether object can have been part of binding of shield rim, one objection being that original diameter was only 0.23 m.

18. DECORATIVE BRACES AND STRIPS.

A. STRAIGHT ORNAMENTAL APPLIED BRACES.

(*Each object differs from the others in type.*)

2785. Small end broken at nail-hole. Length, 0.045 m.

2786. Large end broken. Length, 0.049 m. Claw, length, 0.0065 m. rounded. Diameter, 0.005 m. at base, decreases toward end. Shaft rectangular, with beveled corners (0.0077 m. and less).

2787. (Shows reverse side.) Both ends probably defective. Nails broken close to surface.

Length, 0.221 m. Width of centre, 0.0235 m. and less. Thickness, 0.012 m. and less. At 0.009 m. from end, nail. Blade, width, 0.125 m. Thickness, 0.0064 m. Near centre, nail. At 0.015 m. beyond nail, on narrow side, round hole in shaft. Depth, 0.006 m. Diameter, 0.0035 m. Perhaps cross brace of grating or, more likely, leg of small chair or bed. Cf. lower part of leg of bed in archaic relief from Tegea (Ibrahim Effendi, *Ath. Mitth.* IV. p. 136, pl. vii. Milchhöfer).

B. CURVED ORNAMENTAL APPLIED BRACE.

PLATE CXXXV.

2788. One end broken. Length, 0.221 m. Width, 0.051 m. and less. Thickness, 0.027 m. Ribs raised above surface, 0.0045 m. Near whole end, nail (diameter, 0.006 m.). On under side, hole filled with iron rust. Hence only head is of bronze. At 0.085 m. from first nail, second nail of bronze. Object cast solid, but with many flaws which show on under side. Diameter of protracted circle (inside), about 0.955 m. This and similar objects probably applied to edge of large kettles or caldrons, like the small pieces Nos. **2188**, etc. See, however, *Olympia*, Nos. 1229 f., which are very similar in shape but smaller. Several similar pieces, both larger and smaller in Nat. Mus., Athens, among scraps from Acropolis (uncleaned). In Museum of Florence similar small ornaments, but not flat on one side (Tomba a circolo di Poggio alla Guardia, 1895).

C. STRIPS AND RODS.

Type a. Triangular, the widest side being applied.

2789. One end broken. Length, 0.168 m. Sides, 0.0075 m., 0.0042 m., 0.004 m. End undercut on wide side, probably for purpose of fastening.

2790. One end gone, the other defective. Length, 0.146 m. Sides, 0.0078 m., 0.0043 m., 0.0052 m. Single engraved line near outer edge of each of short sides.

2791. Both ends broken. Length (arc), 0.0585 m. On each of narrow sides, line close to each edge; in interior, broad, rounded, obtuse-angled zigzag of bent lines. Both ends turn slightly outward, hence best put here.

Discards of **Type a**: uncleaned, two.

Type b. Quadrangular (two acute and two obtuse angles).

Manner of application differs from that of objects of preceding type, one of the obtuse angles being applied.

2792. Uncleaned. Both ends gone. Length, 0.173 m. Thickness, 0.0035 m. × 0.0024 m. One end flattens from near break. At break, hole (diameter, 0.002 m.). Shows manner of application and fastening.

2793. Uncleaned. Both ends gone. Length, 0.245 m. Width, 0.0036 m. × 0.0025 m.

2794. Uncleaned. Length, 0.241 m. Forms at centre 8-shaped loop.

Discards of **Type b**: uncleaned, two.

Type c. Quadrangular. Right angles.

Manner of application uncertain.

2795. Uncleaned. Ends gone. Length, 0.085 m. Sides, 0.002 m. × 0.0005 m.

2796. Uncleaned. Length, 0.164 m. Sides, 0.0024 m. × 0.0007 m. and less.

2797. Ends gone. Length, 0.093 m. Width, 0.0035 m. and less. On both sides, rough groove.

2798. Uncleaned. One end broken. Length, 0.084 m. Width, 0.0035 m. and less. Near wide end crossed at right angles by heavy grooves.

2799. Uncleaned. Ends gone. Length, 0.067 m. Width, 0.0055 m. Thickness, 0.0015 m. Near one end, four small fragments of sheet gold, three of which rest on bronze incrustation. This incrustation, and consequently the gold fragments, belongs to some other piece of bronze.

Type d. Flat, quadrangular (as in preceding type), and round shaft combined.

2800. Uncleaned. Ends gone. Length, 0.19 m. Shaft rectangular and round. Size, 0.0053 m. × 0.0008 m.

Probably also: **2800 a**. Uncleaned. One end gone. Length, 0.21 m. Shaft rectangular and round.

Type e. Round shaft, plain.

Manner of application uncertain.

2801. Large end broken. Length, 0.053 m. Diameter, 0.003 m. and less. Use uncertain. Placed here because of similarity to following number.

2802. From West Building. One end broken. Length, 0.25 m. Diameter, 0.0047 m.

2803. Uncleaned. Both ends gone. Length as bent, 0.044 m. Diameter of shaft, 0.0038 m.

Type f. Shaft round (or nearly round), with coil at one end.

Class a. Plain.

2804. One end gone. Length as bent, 0.025 m.

Diameter of shaft, 0.0008 m. Uncertain whether loop is original.

Class β. Chord flat for application. Remainder of circumference has interrupted rope pattern. Coil plain.

2805. One end gone. Length, 0.152 m. Diameter of shaft, 0.0033 m.

Type g. Round shaft consisting of three plain strands twisted together.

2806. Both ends gone. Length, 0.086 m. Diameter, 0.0033 m.

2807. Both ends gone. Length, 0.134 m. Diameter, 0.004 m.

2808. Both ends gone. Length, 0.189 m. Diameter, 0.0037 m.

19. INSERTED DISKS.

Type a. Plain.

2809. Cracked nearly through. Diameter, 0.069 m. Thickness, 0.0043 m. and less. On both sides, slight depressions which look like marks of hammer.

Type b. Ornamented simple disk.

2810. Split by corrosion into several laminae. Diameter, 0.062 m. Thickness, 0.006 m. On outside, rosette, the centre of which is slightly concave; reverse plain.

Type c. Plain, with dowel at back for insertion.

2811. Diameter, 0.0062 m. Thickness, 0.0042 m. Length of dowel, 0.021 m. Disk and dowel of one piece. Cast.

Addenda. Composite disks.

2812. From back of South Building. Defective. Lead kernel nearly intact. Bronze covering mostly preserved. Diameter of leaden part, 0.051 m. Thickness, 0.0053 m. Bronze follows conformation of outer surface.

2812 a. Uncleaned. Lead kernel nearly complete. Bronze only partially preserved. Similar to preceding. Diameter, 0.0525 m.

20. OTHER DECORATIVE ATTACHMENTS AND FRAGMENTS.

2813. One end gone, the other defective. Length, 0.085 m. Width, 0.0105 m. and less. Sides slightly convex. Manner of attachment uncertain.

2813 a. Uncleaned. Similar to No. **2813**. Length, 0.039 m.

2814. Top broken. Height, 0.043 m. Diameter, 0.055 m. Five layers of bronze, decreasing toward top. Diameter of uppermost layer, 0.015 m. Bronze part forms thick conical shell, into which is inserted from bottom solid cone of lead. This cone projects 0.006 m. below bottom, and partially overlaps inner edges of bronze. On top, mass of iron oxide, probably remains of rod which held object as pendant.

2815. Both ends broken. Length, 0.175 m. Width, 0.022 m.

2816. Both ends broken. Length, 0.042 m. Stem with short blade. Width of stem, 0.0097 m.; of blade, 0.0145 m. Blade curved.

21. SUPPORTS.

2817. Found at east end of south slope, April 24, 1893. Height, about 0.125 m. Length of foot, 0.017 m. Width, 0.016 m. Upper part of shaft rectangular. Lower part round.

2818. Uncleaned. Top damaged. Height, 0.088 m. Length of foot, 0.01 m. Width, 0.005 m. Formed by cutting back shaft and bending end. Diameter of shaft, 0.005 m. and less.

2818 a. Fragment. Height, 0.0225 m. Width, 0.011 m.

22. RODS.

Solid.

2819. From West Building. One end broken. Length, 0.476 m. Diameter, 0.006 m.

Hollow.

2820. From south slope. One end broken. Length, 0.121 m. Diameter, 0.01 m. Complete end nearly triangular. Elsewhere, rounded. Open cylinder. Edges do not form straight line.

Filled.

2821. Both ends gone. Shell cracked entire length. Length, 0.123 m. Diameter, 0.023 m. Interior filled with iron rust and another substance which is probably part of core.

23. BARS.

Plain.

2822. From back of South Building. One end broken. Length, 0.06 m. Width, 0.023 m.–0.041 m. Thickness, 0.0033 m. and less.

2823. Length, 0.0735 m. Width, 0.022 m. and less. Thickness, 0.0047 m. and less.

2824. One end damaged. Length, 0.10 m. Width, 0.013 m. Thickness, 0.0095 m. and less.

2825. Condition poor. Length, 0.06 m. Width, 0.025 m. and less, especially toward one end, which terminates in rounded beveled point.

2826. From south slope. Both ends gone. Length, 0.044 m. Width, 0.018 m. and less.

Inscribed.

2827. Both ends roughly cut off. Length, 0.084 m. Width, 0.02 m.–0.0215 m. Thickness, 0.0065 m.–0.0085 m. For inscription see *Appendix*.

24. BALL.

2828. From West Building. Diameter, 0.014 m.

25. CASTINGS.

A. PARTIALLY FORMED OBJECTS.

PLATE CXXXVI.

2829. Standard and paw. Height, about 0.154 m. Height of standard, 0.112 m. Diameter of top of standard, 0.088 m. Attachments cast in one piece with standard: 1. From a point 0.03 m. below top of standard rises diagonally lion's paw with four toes. Toes have claws. From heel projects round stub (length, 0.018 m.; diameter, 0.013 m.). This stub perhaps marks pipe through which bronze was poured. 2. Near top of standard, oblong rounded attachment in line with paws. Length, 0.026 m. 3. From middle of upper part of standard, on opposite side from preceding attachment, round stub rising diagonally.

2830. Crimped arc. Length, 0.109 m. Width, 0.035 m. and less. Thickness, 0.01 m. and less. Top side has ornament of slightly raised rays which do not quite reach outer edge. Inner edge beveled.

2831. Convex-concave arc. Outside diameter, 0.083 m. Width of ring, 0.031 m. and less. Thickness, 0.005 m. and less.

2832. Perhaps part of mold. Size, 0.057 m. × 0.035 m. × 0.009 m. In edge, outlines of at least three circles, of which only the largest shows trace of bottom.

2833. Bar. One end complete. Size, 0.087 m. × 0.027 m. × 0.01 m.

2834. Segment of sphere. Width, 0.072 m. Thickness, 0.037 m. and less.

2835. Uncleaned. Fragment of sphere. Entire surface rough. Diameter, 0.253 m.

B. CASTINGS WHICH PRESENT ACCIDENTAL RESEMBLANCES TO VARIOUS OBJECTS.

2836. (Penis.) Length, 0.083 m.

2837. Bird. Height, 0.04 m.

2838. (Binding for corner.) Length, 0.063 m.

2839. (Saddle.) Height, 0.046 m. Length, 0.05 m.

C. FORMLESS CASTINGS.

2840. Length, 0.14 m. Width, 0.12 m. Thickness, 0.004 m.

2841. Condition poor. Size, 0.085 m. × 0.06 m. × 0.008 m.

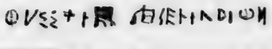
Discards of C: six, of which one from West Building.

Other discards. Here belong a number of pieces, partly castings, partly pieces of sheet bronze, which have been partly melted and fused together, or mixed with other substances, as lead, rock, sand. Most of them show action of fire. Uncleaned, seventy-eight, of which two from back of South Building, near retaining wall.

APPENDIX

INSCRIPTIONS ON THE BRONZES

964. Plate LXXXIX. (photographs). Two copies below. The second, on reëxamination, seemed to represent more accurately the actual condition of the bronze. Letters scarcely legible. Height, about 0.003 m.



(1) Θυστια[ς τ]η[ς] Ελλαδι[ου

(2) Θυστια[ς] Ηελλαδι[ου

Translation: (*Property*) *of Thystia, daughter* (*or wife*) *of Helladios.*

Θυστία[ς: does not seem to occur, but Hesychius has θύστης (quoted by L. and S.) and Θυστάδες (quoted by P.-B.). Cf. also Θ[υ]σσίδαι, *Athen. Mitth.* IX. p. 321 (Ceos), Ἐπίτε[υξις] Θυσίας, *Arch.-Epig. Mitth. aus Oest.* XI. p. 181, and Θύσων, Ἐφ. Ἀρχ. 1883, col. 215. l. 125 (the last two also in P.-B.). For -στ- see G. Meyer, *Griech. Gram.*[3] p. 304, Brugmann, *Griech. Gram.*[3] § 100, 1 a and § 119, 1. — τ]ῆ[ς]: it seems better to assume a blank space between the words than to supply this word, which is not of the Argive dialect. — Ἑλλαδ[ου: see P.-B. *s. v.* and also *C. I. A.* III. 1343, *C. I. S.* 53, 179. Another possibility would be Ἑλλανίδ[ν or Ἑλλανίο[νος, but the nominative case of the former is an objection, and for the latter there is hardly space. The word occurs *B. M. I.* III. § 1, p. 65 (Iasos), Ἑλλανίων Ταρσεύς.

1581. Plate XCVI. (photograph and drawing). Copy below. Retrograde-boustrophedon, beginning

with lower right corner. Height of letters, 0.002 m.–0.0047 m. Letters in lines 1 and 2 increase in size with the direction of the writing.

The letters of the first line are very legible, inasmuch as they are clearly cut and well preserved. Those of the second line, however, have been nearly effaced by the oxidation of the bronze, and were extremely difficult to decipher. Nevertheless, the forms of the letters as given in drawing and copy are for the most part fairly sure. The single letter of the third (middle) line is faint but certain.

Αριστεια Εκε | θαιοι(?) ανεθεκ | ε

Translation: *Aristeia offered* (*me*) *on behalf of Ekethaio.*

For Ἀριστεία, cf. *C. I. G.* 155 (Attic), quoted by P.-B., and there accented Ἀρίστεια. The first letter of the second (top) line may be either θ or φ, but the balance of probability is in favor of θ. Neither Ἐκεθαιώ nor Ἐκεφαιώ seems to occur. For Ἐκεκλῆς, Ἐκεφίδης, Ἐκέφυλος, which present the nearest analogy, see *B. C. H.* Index. The reading of the word as a feminine form from an *oj*- stem instead of a masculine form from an *o*- stem is arbitrary. Dedication on behalf of another person in an inscription from Athens published by Körte, *Athen. Mitth.* XXI. p. 294, Μνησιπτολέμη ὑπὲρ Δικαιοφάνους Ἀσκληπιῷ Ἀμύνῳ ἀνέθηκε. That Ekethaio or Ekephaio is an unknown name of a person is more probable than that it is an unknown epithet of Hera.

1746. Plate CII. (photograph). Drawing below. A single letter. Height, 0.008 m.



Initial letter of Ἥρας or Ἥραι. Cf. No. **1985**, and B. M. *Catalogue of Greek Coins, Peloponnesus*, Introd. p. lv.

1824, 1825. Plates CVI, CVII. (photograph and copy). Retrograde. Height of letters, 0.0055 m.–0.008 m.

$$\left.\begin{matrix}\\ \mu\end{matrix}\right]\begin{matrix}\iota\lambda\lambda\\ \alpha\delta\end{matrix}\left\{\begin{matrix}\upsilon\Phi\\ \bar{o}\bar{\Sigma}\end{matrix}\right.$$

The reading makes it probable that the fragments are to be combined, in spite of the difficulty of adjustment. This part of the inscription probably contained names only. It is probable that the fathers' names were added in a second column at the left, but even if they were placed under the names of the sons, the first name on the fragment, as next to the last, would still be in the nominative.

The first name is probably Φιλλίας, cf. *C. I. G.* 1514 (cited by Pape-Benseler), Πιστικλῆς Φιλλία; *C. I. S.* III. i. 446 (Stratos), l. 4. Φιλλίας Τηλα[ύγεος,

or Φιλλίδας, cf. *C. I. S.* III. i. Appendix, 1066, l. 2, Φιλλίδα; *B. C. H.* V. p. 413, No. 22, l. 3, Τίμων Φιλλίδα Ἀμφισσεύς; *ibid.* p. 414, No. 23, ll. 14, 15, Φιλλίδας. It may also have been Φίλλις. Cf. *B. C. H.* Index, 1877–86, and vol. XX. p. 206 (Delphi), l. 35, Φίλις Ἀργεῖος, Φίλλις Ἀργεῖος. For Φιλλίδας and Φίλλις in literature, see P.-B. The second name is probably the nominative, possibly the genitive, of Σώδαμος. Cf. the indices to the various *Corpora*, and to *B. C. H.*, and Ἐφ. Ἀρχ. 1883, col. 29, No. 9 (Epidauros), Νικάταν Σωδάμου. An Argive named Σωδάμας is mentioned by Paus. III. ix. 8 (quoted by P.-B.).

Double writing of consonants is the rule for Argive inscriptions which have four-stroke sigma, so even in *A. J. A.* XI. p. 43, l. 5, Ἴλλεύς. In those which have three-stroke sigma there are no cases in point. Those which use *san* write but one consonant in cases of gemination. Cf. *I. G. A.* 30, l. 5, and Nos. **1826**, l. 9, Ἴλλᾶς, and **2252**, ἐ Σικελίας. It follows that for the period to which an Argive retrograde inscription would naturally be assigned the single consonant should be expected. The double writing of the consonants in this inscription, taken together with the style of the letters, makes it probable that this is an exceptional example of retrograde writing at a later period. Cf. the retrograde writing of names of Argive kings on the hemicycle on the north side of the sacred way at Delphi. *B. C. H.* XVIII. p. 186, and Frazer on Paus. X. x. 5.

1826.[1] Plates CVI. (photograph) and CVII. (drawing).[2]

1. φ(or ρ)αθματα ⁝⁝ τ· αδεν ⁝⁝ hαγνο-
2. [h]ε συνχεοι ⁝⁝ τας αρας ⁝⁝ τας
3. γας ⁝⁝ τας Αργειας ⁝⁝ τα δε παμ[ατα
4. -κα [θ]ανατον ⁝⁝ hε αλλο τι καϙον ⁝⁝ h-
5. ε]π[ιτ]εχνυτο ⁝⁝ ε[h(?)o]ε ϝισζειε ⁝⁝ [τ or ϙ]o-
6. -ος ⁝ προ[π(?)]ρο[ρ(?)]ος ⁝⁝ εξπρια-
7. αι δε μ]ε δαμιο[ρ]γοι τις ⁝ hοι[ς (?)
8. -ϛ] Αργειας ⁝⁝ και hοι ϝοι ε-
9. -ο ⁝⁝ τοι Ηιλες ⁝⁝ απυδομ[εναι
10. γας ⁝⁝ Αργειας γα ⁝⁝ κατακ[α-
11. -γνον ϝοι εστο ⁝⁝ ποι τας Η[ϝρας

The interpretation depends to a considerable extent on the view which may be taken of the dot after τ in the first line. Rogers, who thinks it an attempt to puncture the plate for a nail-hole (*l. c.* p. 166), and Fränkel disregard it in reading, and join τ to what follows. The reading thus obtained, τάδ' ἐν, is easy and plausible, and there are examples of allowance of space for nail-holes.[3] Preparation for the nail by means of a carefully worked indentation is a somewhat different matter; and until examples are found for it, it may be well to look for some other explanation, especially as in this case the indentation was not actually used for such a purpose. The analogy of the Locrian inscription (*I. G. A.* 321), where letters (usually prostrate) with three dots on either side serve as a means of numbering the paragraphs, suggests that ⁝⁝ τ· in this inscription may have a similar use. In this case the letter would probably introduce the last paragraph in the document, namely, that containing the sanctions. If so, additions to the main body of the document are not to be expected, but simply measures to secure the fulfillment of the provisions of the preceding paragraphs.

Line 1. φαθματα: for the slight preference in favor of φ as against ρ, see above *s. n.* For φασματα with substitution of -σμα for -θμα, cf. Brugmann, *Griech. Gram.*[3] p. 186. In the absence of the preceding context, it is uncertain whether the word is complete as it stands, and, if so, in what sense it was meant. Nor is it possible to look forward for a reference, if the above hypothesis regarding the paragraphs be correct. The termination would also fit ὑφάσματα. A*φάθματα like φήμη, fāri, Sansk. bhā-ti, seems not to have existed in Greek. Rogers and Fränkel take the initial letter to be ρ. The former suggests (*l. c.* p. 165) γράθματα = γράσματα = γράμματα, δράθματα = δράσματα · συνθάματα, ἀγοράσματα, and (*l. c.* p. 174) ἰαρθάματα. In understanding γράσματα (< γράθματα) as γράμματα he agrees with Robert (to whom he refers), who thus interprets γρασσμάτων in the inscription from Hermione (*Mon. Ant. Linc.* I. col. 598). Neither indicates the process by which *grabh-ma becomes γρα-θμα or γρα-σμα.[4] Fränkel reads -ρ or σ]άθματα without explanation. To these conjectures may be added ῥάθματα = *ῥάσματα = ῥάμματα (*C. I. G. S.* 2421). For the sense of this, as also of ὑφάσματα above, cf. the prescriptions for dress in the sacrificial inscription from Andania (Cauer, *Delectus*,[2] p. 33, No. 47). However, as in the case of γρα-θμα above, it is difficult to account for the substitution of suffix-initial θ or σ for the final labial consonant of the root without a somewhat extensive and perhaps unsafe application of the principle of analogy. — αδεν: if this word begins the paragraph, it can scarcely be anything but ἄδ' ἐν (in sense of δεδόχθαι) or ἄδεν[5] (in sense of ἔδοξεν), from ἀνδάνω. The difficulty with regard to the breathing is pointed out by Rogers, *l. c.* pp. 163 f.; nor do examples of ψίλωσις like Ἰπ(π)ομέδων, *I. G. A.* 30 (cited by Kühner-Blass, I. p. 109), and Ἥρας, ἰαρομνάμονες, *A. J. A.* XI.

[1] Published by J. D. Rogers in *A. J. A.*, Second Series, V. (1901), pp. 150 ff., and by Max Fränkel in *Inscr. Argol.* No. 506 (*I. G.* IV.).

[2] By E. Gilliéron.

[3] See Rogers, *l. c.* p. 167. Add the inscription from Olympia published in the *Jahreshefte d. Oesterreich. Arch. Instituts*, I. p. 197 (Szanto).

[4] For a discussion of this word see Helen M. Searles, *A Lexicographical Study of the Greek Inscriptions, s. v.* γράσσμα.

[5] Mentioned as a possibility by Rogers, *l. c.* p. 163.

(1896), p. 43 (cited by Rogers), quite suffice to obviate it. — ἀγνὸ[ν(?)]: as the amount of text lost at the sides of the plate is uncertain, it is useless to try to fill out the lines. From the position of the word and that of συνχέοι below, it may be that the sense of the beginning of the sanction was something like ἀγνὸν τὸ ἄδος τοῦτο· αἰ δέ τις ταῦτα παρβαίνοι ἢ συνχέοι κ.τ.λ.

Line 2. συνχέοι: L. and S. *s. v.* II. 2. Cf. *I. G. A.* 500, τὸν] *νόμον τοῦτον ἢν τις θέλῃ* [συγ]χέαι ἢ *προθῆτα*[ι] *ψῆφον ὥστε* [*μὴ κ*]*ῖναι τὸν νόμον τοῦτον.* Slightly different in sense in the inscription of the Labyadae, *B. C. H.* XIX. p. 12, l. 28 (Homolle). — ἀρᾶς: genitive. The apodosis begins here. The form *τᾶς ἀρᾶς τᾶς* shows that a definite curse, described in the missing part of the line, is meant. For similar formulae see Rogers, *l. c.* p. 168. Something like ἔνοχος ἔστω may be supplied with Rogers. Cf. Cauer, *Delectus*[2] No. 430 (Eresos), A ll. 24 f. [κ]α[ὶ] *τἄλλα ἓ*[*ν*]οχος [*ἔ*]*στω τῶ νόμω* [*τῶ* or *τῶ ἐπὶ τῶ*] *τὰν στάλλαν ἀνελόντι*; also D l. 16, ἐνόχοι[ς *ἔμμε*]*ναι τῶ νόμω* (dative or genitive). Specimens of ἀραί (public), *I. G. A.* 497 (Teos) and (private), *C. I. A.* III. ii. 1417–1420 (Herodes Atticus); cf. Wuensch, *C. I. A.* Appendix, p. ii., and Ziebarth's article there cited, 'Der Fluch im Griech. Recht,' *Hermes*, XXX. (1895), pp. 57 ff., where other examples are given.

Line 3. Besides inclusion in the curse mentioned above, the culprit is to be banished from Argive territory and his property (*πάμ*[*ατα*]) is to be confiscated. Cf. the tablet from Hermione above mentioned, l. 5, ⁝ *τρέτῳ καὶ δαμενέσσθω* ⁝ *ἐνς* | *Ἀθαναίαν* ⁝. Rogers quotes appositely, *I. G. A.* 500 (Halicarnassus), ll. 35–37.

Line 4. -κα [*θ*]*άνατον* or κα[ὶ] *ἄνατον*, Rogers. κ[*α θ*]*άνατον*, Fränkel. There is sufficient trace of concavity in the edge at the left of *α* (see *s. n.*) to make it likely that *θ* is the correct reading. There is room for *κα*[*ὶ θ*], but the letters would be somewhat more crowded than they are in other parts of the line. -*κα* [*θ*]*άνατον* is therefore epigraphically preferable. So far as concerns the context, it is too scanty to afford a sure basis for choice, but it is at least clear that the verb of which [*θ*]*άνατον* is the object cannot be directly connected with the verb of which *πάμ*[*ατα* is the subject, because death is not a penalty which can be inflicted after confiscation of property and banishment. Some new set of circumstances must intervene. On the other hand, consistency with the general view of the inscription taken above requires that the [*θ*]*άνατον* ἢ *ἄλλο τι καϙὸν* refer to the same person with the subject of *συνχέοι*. It is probable, then, that the commencement of a new clause or sentence has been lost, and that if there is a connective before [*θ*]*άνατον*, it joins the verb on which [*θ*]*άνατον* depends with the verb of a lost preceding clause of similar purport, i. e. ['If any one should . . .] and [should contrive] death or any other harm [against the exile.' Unless a full clause be supplied before [*θ*]*άνατον*, some other reading than *κα*[*ὶ*] must be found, an adverbial use being unlikely. Rogers suggests *πο*]*κά*, which would be suitable, and, taking the scantiness of space into account, is to be preferred to *κα*[*ὶ*]. — h-: it is useless to try to complete the word. Rogers suggests h[*οτιῶν* and h[*ᾧτινι* (*l. c.* p. 169).

Line 5. For the first word Rogers and Fränkel have *ἐ*]*πι*[*τ*]*εχνῶιτο*, which the former takes directly with *καϙὸν*. The reading is probably correct, but the combination with *καϙὸν*, though it makes good sense, is rendered doubtful by the lack of evidence as to the length of the lines. It seems reasonable to suppose that the verb is in protasis, but so far as concerns its position it might also be in apodosis, as the expression of a wish or curse: only, in that case, some other reading would have to be found, — something more plausible than *ἐ*]*π*[*ι*ϝ*έχνοιτο* (cf. Pamphylian *Fεχέτω*, *I. G. A.* 505, l. 24; G. Meyer, *Griech. Gram.*[2] sections 198, 240; Prellwitz, *Etymolog. Wörterbuch*, *s. v.* ὄχος; Searles, *op. cit. s. v.* *Fέχω*), or *κατα*]*π*[*σ*]*ήχνοιτο* (but the existence of a *ψ* in epichoric Argive is rendered probable by the presence of *ϕ*, and by the occurrence of a *ψ* among the builders' marks on the stereobate of the New Temple; cf. Brownson, *A. J. A.* VIII. p. 219), neither of which has been found in Greek. Unfortunately, the following clause is itself so mutilated and difficult as to afford no assistance. Here Rogers reads (*l. c.* p. 174) ἢ[*το*]*ι ῥισζείη* or *ἐ*]*ν ὧ*]*ι ῥισζείη*, and Fränkel, *l. c.* *ωεῖσζειε*, with the remark, "*ἐ*[*π* (*sive ἐ*[*ν*, *ἐ*[*ξ*)] *ωεῖσζειε* (*sive -σζείη*) explicent peritiores." The lacuna after the first letter of the clause preserves the outline of a letter at each side, that at the left being either *ο* or *θ*, as is evident from shape and size. Between it and the opposite edge there is space for one letter of average size, or for two letters, if one were *ι*, and the other a narrow letter like *κ*, *γ*, or *λ*. Of the letter at the right there remains the right bevel of a full-length vertical hasta. It is also beveled at the top, contrary to the custom of the inscription in the case of the ends of strokes, and continued horizontally to the left for about 0.0005 m., thus making it probable that the vertical hasta was met by a stroke which joined it from the left, and, more likely than not, at right angles. The letters which correspond best to these indications are ⅂, Β, Ɑ, and Ϙ. It will be seen at once that Τ (as in ἢ[*το*]*ι*) is impossible, nor are the conditions favorable for the letters with slanted tops, as ϟ, Ϻ, ϟ, etc. This fact and the doubtful *ψίλωσις* seem to render *ἐ*[*ν ὧ*]*ι* very improbable. Of the indicated letters, *δ* and *ρ* seem to yield only optatives, e. g. **ἐ*[*δο*]*ι*, *ἐ*[*ρ*(*ρ*)*ο*]*ι*, the relation of which to the context would be difficult of explanation; *π* also leads to a series of improbabilities, e. g. (1) *ἤποι* for *ἤπου*, which involves difficulty of

form and sense; (2) **ἔποι* for *ὅποι*, which might be construed with a following optative, but does not occur, and cannot well be invented because the pronominal root *ο* (Brugmann, *Grundriss*, II. p. 768, *Griech. Gram.*[2] p. 243; cf. G. Meyer, *Griech. Gram.*[2] p. 179), apart from its rarity in Greek, is not used to form relatives; (3) **ἐποί* for *ἐπεί* (cf. *οἶκοι*: *οἶκει*), also construable but also non-existent, and in use contrary to the other conjunctive-adverbial forms in -*οι*. There remains h, with which it might be possible to read *ἑ*[*ωῖ*]*ι* (*sc.* *ἐν* *ὧι*), provided the absence of the -*ν* could be explained. As we have no right to assume errors in an inscription so carefully cut, and as assimilation of *ν* before h is out of the question, it seems necessary to assume a parallel form *ἐς*, derived from *ἐνς* (cf. the inscription, *Mon. Ant. Linc.* I. col. 594, l. 5, of an earlier period than *I. G. A.* 38, l. 4, -*ανς τάνς*), in accordance with the principle stated by Brugmann (*Griech. Gram.*[2] p. 75, 3), and like *ἐν* used with cases of rest. Proclitic preposition and object forming practically one word, the -*ς* would become medial between vowels and change to -h according to the principle also exemplified in *I. G. A.* 38, so that *ἑΗ*- would represent *ἐ*(h)h. — What follows is read by Rogers *ῥισζείη* and explained as *εἰδείη*. Context and usage make this interpretation seem very probable. The presence of *σζ*(*ζ*) is, however, difficult to account for (*ῥιδ-ϵ*(*σ*)-*ιη*). Elean *ῥιζώς* is, of course, of no assistance because of *ξίκαιος*, etc. (Cf. G. Meyer, *Griech. Gram.*[2] p. 269.) The weak form of the root seems to encourage the conjecture that we may possibly have here a trace of the direct application of the optative suffix (*ιη*) to the root (*ῥιδ*), the sibilant thus produced being afterward extended to the sigmatic aorist. Cf. Brugmann, *Griech. Gram.*[2] p. 337, and *Grundriss*, II. p. 1302. Rogers also suggests and rejects "*ῥὶς* (*γίς*· . . . *ἰσχύς*, Hesychius) *ζεία* (**ζῆμα*)." To add another improbability, it might be possible to think of a **ῥίς*, nominative of *ῥοῖ*, *ῥίν* (large inscription from Gortyna, col. II. 40; Roehl, *Imagines*, p. 45, No. 6 = Roberts, *Introduction to Greek Epigraphy*, No. 304 a), as a parallel form of ζ, Sophocles, *Frag.* 427 (Nauck), cf. Kühner-Blass, I. pp. 583, 595 f., G. Meyer, *Griech. Gram.*[2] p. 508, n. 1. — At the end of the line Rogers reads, Ϙο[*θαρὸς* or *το*[*ῦτον*, and Fränkel [*τ*(?)]*ο*-. As has been stated before (*s. n.*), conditions of space and preservation admit *τ*, Ϙ, or *υ*, with slight, if any, preference. Beyond the *ο* the edge has a vertical bevel, 0.0105 m. in length, showing that the right hasta of the missing letter was a straight upright stroke. This renders both *θ* (Ϙοθαρὸς) and *υ* (*τοῦτον*) impossible. Owing to the position it is unlikely that the indirect object of *ἐ*]*πι*[*τ*]*εχνῶιτο* (e. g. [*τ*]*ῶ*[*ι φυγάδι*, [*τ*]*ο*[*ῖς φυγάσιν*, [*τ*]*ο*[*ῖς Ἀργείοις*) is to be supplied. It is more probable that this is the beginning of the apodosis, which stated the contemplated result of the preceding clause, i. e. reward if the action of *ἐ*]*πι*[*τ*]*εχνῶιτο* was directed against the exiles, punishment if it was directed against state or people.

Line 6. As Rogers has remarked (*l. c.* p. 170), the line treats of property (presumably the *πάμ*[*ατα* of l. 3), which is to be bought. The word ending in -*ος* at the beginning evidently designated the person who was to have the first right of purchase. Rogers infers *δαμιοργ*[*ὸς* from the following line, or, with less probability, *ὃς ἔχων μέγιστον τέλ*]*ος*. — For the following word Rogers reads *πρό*[*γ*]*ρο*[*φ*]*ος*, Fränkel, *πρό*[*τ*]*ρο*[*π*]*ος*. As the left side of the hole terminates with an upright bevel with no trace of protraction of a top-bar to the left, the latter reading is impossible. The former reading is plausible so far as concerns the sense, but it is rendered doubtful by the fact that the upper edge of the hole, while it can scarcely be said to be beveled, is nevertheless horizontal, and suggests cleavage along the line of a horizontal stroke. Furthermore the point of departure of a downward stroke seems to be visible in the upper edge at about 0.0055 m. from the left hasta. As there is no trace of a corresponding stroke on the under side of the lacuna, the letter thus outlined could not well be other than Γ. If this is correct, it is not easy to see just what the reading was. Setting aside evident impossibilities like *προ*[*π*]*ρὸ* [h]*ὸς* and *πρὸ* [*π*]*ρο*[*ικ*]*ὸς*, one might perhaps think of h*ϵ*[*π*]*ροροϵ* on a bronze basis from Ligouriò, from which Kretschmer in *Jahreshefte*, III. pp. 134 f., evolves *πρωροί* (for *φρουροί*). But that the person designated could be qualified as *πρόπρωρος* even in a transferred sense, or the action of the verb as *προπρώρως* (i. e. 'as a precautionary measure'), seems a hazardous supposition. — The condition of the bronze at the end of the line is described *s. n.* As there is an upright bevel at the right edge of fragment *d*, it is possible to read *ἐξπρια*[*σθω* with Rogers, or *ἐξπρία*[*ιτο* or *ἐξπριά*[*μενος*. The first is preferable. For -*υ*- see on next line.

Line 7. *αἰ δὲ μ*]*ἐ δαμιο*[*ρ*]*γοῖ τις*: so Rogers and Fränkel, except that at the beginning they bracket only the first letter, inasmuch as the letters *ι δϵ* (qu. and *μ*?) were traceable when the plate was found (cf. Rogers, *l. c.* p. 160). — *δαμιο*[*ρ*]*γοῖ*: with the -*υ*- cf. *ἐξπρια*- above, *Καρνειάς* (**1877**), *Σικελιάας* (**2252**), and the *ἅλιος γέρων* inscription *I. G. A.* 34 (= Collitz, *S. G. D. I.* No. 3261 = *Olympia*, IV. pp. 101 ff., pl. xxxix., V. No. 693). For relations with Cypriot and Pamphylian see Brugmann, *Griech. Gram.*[1] p. 18, and *ibid.*[2] p. 37. Cf. G. Meyer, *Griech. Gram.*[2] p. 220, and Rogers' note, *l. c.* p. 171. It is perhaps worth while to notice that, while in Cypriot in every case between i + vowel (and u + vowel) a corresponding semivowel -j- (or -u-) is developed (cf. Hoffmann, *Griech. Dialekte*, I. pp. 37 ff.), in Pamphylian this semivowel is written at least, chiefly in the

older inscriptions (Sillyon and coins of Aspendos and Perge). As to the character of the sound there appears to be substantial agreement between Pamphylia and Argos, for there exist in both probable cases of an inherited -ια suffix, e. g. ταμίας, ἐπιτηδίως (Pamph.), ἄλιος (Argive), along with cases like πόλις (Pamph.) and Καρνείας (Argive), where primary inheritance is less certain, and again instances where a secondary ι appears in the place formerly occupied by an entirely different consonant, e. g. Pamphylian ἰαροῖσι (-ϸ-, cf. Sansk. -ṣ-), Fέτεα (-s-), Argive δαμιο[ρ]γοῖ (-r-). Pamphylian and Argive also approach each other and differ from Cypriot in allowing the ι to be developed after other sonants than simple ι, e. g. Fέτεα, Καρνείας. In this inscription, however, Ἀργείας is written without ι. — The next word is uncertain owing to the difficulty of deciding between *san* and μ at the end of the line. From the description previously given (*s. n.*) there seems to be a slight preference in favor of *san*. We may therefore, with due allowance, read οἷς. Rogers suggests hoῖς (viz. *τρόπαις οἷς* [ho *νόμος κελεύει τοι* and *οἷ μ*]*έγιστα τέλεα ἔ*| *χοντι*). That here and in the following lines there are, as Rogers has observed (*l. c.* p. 171), provisions for the carrying out of the confiscation of the property of the exile, and for the punishment of the magistrates who fail of their duty in the matter, seems probable, but there are not sufficient data for any probable completion of the lines. For a variety of ingenious attempts, see Rogers' article.

Line 8. τᾶς] may be supplied at the beginning. Fränkel remarks that the absence of punctuation (cf. ll. 3 and 10) points to the article. γᾶς may have preceded. Banishment of the *δαμιοργός*, or of the officials upon whom the duty would next devolve, is probably indicated. In the former case καὶ οἷ *τοι*, with which Rogers reads ἐ[γγύτατα εἶεν, would be appropriate, in the latter οἵτοι (as in Cypriot for epic οἵτε, also suggested by Rogers), with which we might perhaps supply ἐ[ν τᾶι ἀρᾶι ἐνέχοιντο (cf. *I. G. A.* 110).

Line 9. The first letter might be the end of an optative, e. g. *βώλοιντο*, as Rogers conjectures, or possibly of a pronoun, e. g. *τοῦτο*, *αὐτό*. Under certain circumstances, specified in the preceding lines, the tribe of the Hylleis (cf. *A. J. A.* XI. p. 43, No. xii. l. 5, and Richardson's note, pp. 45 f.) are to sell the property (ἀποδόμ[ενοι), probably, as Rogers suggests, for the benefit of the sacred treasury. The edge at the end of the line is beveled, indicating ⁝⁝.

Line 10. γα for γε; so Rogers and Fränkel. The territory of Argos is contrasted with some other district or place specified in the inscription, or with extra-Argive territory in general. — At the end of the line the left bevel of the left hasta of an α is preserved for nearly its entire length. Rogers, who supplies κατακ[αλέοι, is probably right in assuming that the sentence refers to the recall of the banished person. It is also conceivable that in this and the following line approval in the sight of Hera is invoked for any one who shall slay a fugitive (original offender or derelict official) from Argive territory at least, in which case κατακ[άνοι could be read.

Line 11. The γ at the beginning is certain. According to the view which may be taken of the intent of the preceding line, the word may be completed as ἄνα]γνον or στυ]γνόν (both suggested by Rogers), or, if κατακ[άνοι (or something of similar meaning) be read, as ἁγνόν. — ποῖ for πρὸς (cf. Prellwitz, *Etym. Woerterb. s. v.* ποτί, Searles, *Lexicog. Study, s. v.*, G. Meyer, *Griech. Gram.*² p. 389, n. 1). — Η[ἔρας: the right bevel of the upright of the ε is preserved.

1827. Plates CVI., CVII. (photograph and copy). Height, 0.0085 m. and 0.0035 m.

το

It is possible but not probable that part of an α remains on the right.

1877. Plate CX. (photograph and copy). The letters faint but certain. Height, 0.007 m.

Θαμοφιλος με ανεθεκε ται Hēραι: τας Καρνείας

Translation: *Thamophilos dedicated me to Hera from* (i. e. perhaps *spoil from*) *the Karneia.*

Θαμόφιλος: second, third, and fourth letters very faint. The name does not seem to occur. Analogous are Θαμυλῆς, *C. I. G.* 1840 (Corcyra), Θεμνόστρατος, *B. M. I.* II. p. 83, No. 298, l. 26 (Calymna), and perhaps Θάμυρος, *C. I. A.* IV. Add. No. 23, l. 4. See Fick-Bechtel, *Griech. Eigennamen*, p. 139. — *ἀνέθεκε*: cross-bar of α uncertain, but lowest of the three possibilities indicated in copy is the most probable. — *Καρνείας*: the dotted line in copy of K represents a false stroke in the original. Right side of ρ uncertain owing to oxidation. The lines indicated by dots in copy are fairly clear, but probably do not belong to the letter. Preller-Robert, *Griech. Mythologie*, I. p. 250, n. 3, assume a festival of Apollo Carneios at Argos on the basis of Schol. to Theocritus, V. 83, and Hesych. *s. v. ἀγητής*, according to whom Apollo Carneios was called Ἀγήτωρ at Argos, and was worshiped at the festival called *ἀγητόρια*. The use of the singular is noticeable. Elsewhere τὰ Κάρνεια. Here it probably agrees with the genitive singular of *ἑορτή*, a word used by the Scholiast above cited in speaking of the Carneia, and by Herodotus, I. 31, in referring to the Heraea (*ἑούσης ὀρτῆς τῇ Ἥρῃ τοῖσι Ἀργείοισι*), or possibly with *ἀμέρας* (genitive singular), cf. *Καρνεῖαι ἡμέραι* (*J. H. S.* IX. p. 328, from Cos). The genitive is slightly freer than in *τἀργεῖοι ἀνέθαν τῷ Διρὶ τῶν* Κορινθόθεν (*I. G. A.* 32), but resembles that in ἐπ]ὶ Ῥαχσιάδαι Ποθίων με [*κατεθηκεν - -*] Λαυπείδου Σθενίδαι on a bronze fragment from the Acropolis. Bather, *J. H. S.* XIII. p. 129. For -ιμ-, see on No. **1826**, l. 7.

1878. Plate CX. (photograph and copy). Letters faint and in part illegible owing to oxidation. Height, 0.0045 m.

N[ι]κασιας με ανεθεκε ται Hēραι.

Translation: *Nikasias dedicated me to Hera.*

Νικασίας: right bar of N and following letter hidden by oxidation. Instead of -σιᵛ, -νιᵩ- may be read, as the upper right hasta of the *san* is faint and not quite certain. It does not seem to have been joined at the top to the remainder of the letter. For Νικανίας, which does not seem to occur, cf. Ανσ-ανίας, Πανσ-ανίας. For -ιμ- see on No. **1826**, l. 7; Νικασίας, for Νικησίας, is found *C. I. G.* 1513, l. 18 (Tegea). — Hēραι: middle bar of ε uncertain. Cross-bar of α given by upper stroke. Nevertheless, the dotted line probably represents a real stroke.

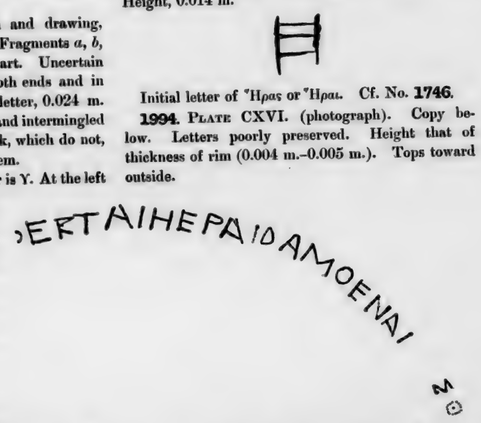
1882. Plate CXI. (photograph and drawing). Both show concave side of dots. Inscription retrograde. Broken at both ends, and abraded at bottom. Preserved height, 0.028 m.

α]κυ

Perhaps a proper name beginning with Λυκα-. On the same side, a number of circles (see drawing), perhaps decorative, and in any case independent of the inscription.

1883. Plate CXI. (photograph and drawing, both showing concave side of dots). Fragments *a*, *b*, and *c*, of which *b* is in uninscribed part. Uncertain whether *c* joined *b*. Defective at both ends and in interior. Height of best preserved letter, 0.024 m. On the same side with the inscription and intermingled with it are many circles faintly struck, which do not, however, seem to form part of a system.

Fragment a. The only certain letter is Υ. At the left along and near broken edge, lightly struck dots and circles, which may form part of an Η. At the right near edge, complex of dots in which it is difficult to recognize any letter except possibly an un-Argive Λ, or a Ρ reversed (Ꭱ), or an Α. It is profitless to speculate as to what name beginning Ὑλ- or Ὑρ- or Ὑα- may have stood here.



Fragment c. In central part, ΑΙ in heavy dots. At left edge, three similar dots which may have formed part of a Τ. At right edge, Ϲ, also in heavy dots. The inscription may be read ΤΑΙϴ, i. e. τ]αι Hē[ραι. With the rounded Ⲏ cf. the rounded Ϲ in No. **1886**, and the Ο (if for Ⲏ) on coins of Argos, *B. M. C. Peloponnesus*, p. lv. For Λ, cf. *I. G. A.* 351 f. (Aegina), and alphabet tables in Larfeld (Iw. Müller, II. p. 532), and Roberts, *Greek Epig.* The inscription is archaic.

At the right of Λ, a sort of Τ of faint circles, followed by a straight line and an s-shaped line of the same. Probably not intended for letters.

1885. Plate CXI. See *s. n.*

1886. Plate CXII. Shows concave side of dots. Defective at both ends. Height of letters, 0.025 m.–0.032 m.

ϴRIA -θρια-

With Ϲ cf. Η in No. **1883**. Beneath loop of ρ, three or four dots, faintly struck, perhaps for tail.

1887. Plate CXI. Shows concave side of dots. A single letter, one side of which is gone. Height, 0.02 m.

Probably an Ⲏ. The middle bar is entire. Above end at edge of break, beginning of dot.

1888. Plate CXI. See *s. n.*

1889. Plate CXII. (photograph and drawing, both showing concave side of dots). Fragments *a* and *b*. They probably do not adjoin. Letters, none of which is complete, in heavy dots. Independent of them, numerous circles without systematic arrangement.

Fragment a. Parts of two letters, perhaps Γ and Ρ (the latter reversed).

Fragment b. Perhaps ΙΑΤ, ι α[τ, i. e. τ]αι.

1985. Plate CXV. (photograph). Copy below. Height, 0.014 m.

Initial letter of Ἥρας or Ἥραι. Cf. No. **1746**.

1994. Plate CXVI. (photograph). Copy below. Letters poorly preserved. Height that of thickness of rim (0.004 m.–0.005 m.). Tops toward outside.

. . ξρ ται Hēραι δαμιο<ιρ> ἔναι . . Σ

Translation uncertain. Perhaps a record of deposit with Hera for the benefit of the people.

The first letter looks like half of an *o*, but may be only an accident of incrustation. On the latter supposition possibly to be supplied . . *πατήρ* or *μήτηρ* preceded by a personal name in gen. Cf. *I. G. A.* 495 (Erythrae) . . . . *τόδε σ*[*ῆ*]*μα μήτηρ ἐπέθηκε θανόντι Φανο*[*κ*]*ρίτῃ παιδὶ χαριζομένη*, though not a close par-

allel either in construction or sense. — δάμο<ν> : probably -ου (rather than ω), as was usage after the introduction of the Ionic alphabet. Absence of article could be taken to indicate the presence of a proper name, i. e. Damos. — ⟨ε⟩ναι = ἦναι or perhaps better εἶναι, to be consistent with δάμου. The form seems here to be Arcadian. — In the third space after ⟨ε⟩ναι there seems to be a Σ. It may have been preceded by ἐς (= ἐκ). Otherwise possibly similar to *J. H. S.* XIII. p. 128, No. 53, Ἀθηναίας Μ, where Bather suggests Μήδων. Cf., however, Rouse, *Greek Votive Offerings*, p. 105, n. 1. — For use of shrines on Acropolis at Athens as places of deposit, see Bather, *ibid.* p. 129.

2239. Plate CXXV. (photograph and copy). Length, 0.052 m. Letters much damaged by corrosion. Height, 0.0044 m.–0.013 m.

ταϛ Hε̄ραϛ

τᾶϛ: upper cross-bar slightly heavier and probably to be preferred. — Ἥραϛ: tail of ρ certain. In case of last letter the fourth stroke seems to have been at the lower edge of the upper excoriation, but the corrosion renders the intention of the engraver somewhat doubtful.

For interpretation, cf. ἱερὸν τῆϛ Ἀθηναίας, *J. H. S.* XIII. p. 126, No. 10, and Ἀθηναίᾳ, *ibid.* p. 128, No. 52. On an axe from Calabria, τᾶϛ Ἥραϛ ἰαρός εἰμι, *I. G. A.* 543. Cf. also the inscriptions from the Cabirion near Thebes, Szanto, *Athen. Mitth.* XV. pp. 388 ff.

2252. Plate CXXVI. (photograph). Copy below. Length, 0.115 m. Letters not engraved, but struck with chisels. Height, 0.005 m.–0.007 m.



Ενδαμας ⋮ με ανεθεκε ⋮ ε⟨ϝ⟩ Σικελιας

Translation: *Eudamas of Sicily dedicated me.*

Εὐδάμας: the penultimate letter is badly made, but probably was intended for an α. The name occurs also in *C. I. G.* II. 2266. *I. G. A.* Add. 43 a, said to be from Argos, has ΕΥΔ . . . Σ. — ἐ Σικελίας: ἐ⟨ϝ⟩ for ἐκ. Cf. ἐ Ναυπάκτω (*I. G. A.* 321), ἐ τᾶϛ Χαλκίδοϛ, ἐ τᾶϛ Οἰανθίδοϛ (*ibid.* 322), and especially ἐϛ πόλιοϛ, *C. I. P. I.* 492, l. 2. For the single writing, cf. τὸν συναρτύνταϛ in the Tyskiewicz inscription, l. 2 (*Mon. Ant. Linc.*, I. p. 594). The formula is similar to Νάξιοι ἐξ (Σ)ικελίας in an inscription of the ἱεροποιοί at Delos (*B. C. H.* VI. p. 34, ll. 51 f.). On the other hand, Ταυρομενῖται οἱ ἀπὸ Σικελίας in an inventory from the same place (*B. C. H.* X. p. 465, l. 115). The former is of about 180 B. C., the latter of 364 B. C. The island is probably meant. Another Sicily in the Peloponnese is mentioned by Stephanus, *s. v.* and Eupolis, *Fragm.* 280 (Kock, cited by P.-B.). For the -ᾳ- see on No. **1826**, l. 7. — With the punctuation contrast ⋮ μ' ἀ ⋮ νέθεκε ⋮ in the Euthykartidas inscription (*B. C. H.* X. p. 464).

2827. Plate CXXXV. (photograph and copy). Incomplete at both ends. Height of letters, 0.01 m.–0.016 m.

ανεθε̄κ]ε ται Hε̄[ραι

SILVER RING[1] FROM THE HERAEUM.

Plate CXXXVII. Photograph of ring (actual size) and of impression of seal (enlarged). Copy of inscription. Condition fairly good except at end of inscription where there is a break of 0.0055 m.–0.0065 m. Uncertain how much of bar is missing, but there is space for only one or two letters. Diameter, 0.0185 m. × 0.0145 m. Height, 0.004–0.0043 m., increasing to 0.006 m. at seal. Thickness of bar, about 0.0065 m.

Bar ornamented with fine beading near each edge. On the seal, incised figure of uncertain character. On the original as well as on the photograph thereof, one seems to see a crouching figure resembling a monkey, which might perhaps be intended for Bes, a representation of whom in porcelain was found in the first year's campaign. However, the wax impression and its enlarged photograph show rather a winged figure with cylindrical body, around the bottom of which are two bands. The head seems to be detached and slightly removed from the axis of the body. There seem to be three slender legs, but only two feet; the third is perhaps behind the others. This figure would probably be that of some daemon, perhaps a form of Ἔμπουσα. For others, not very similar, see Furtwängler, *Die Antiken Gemmen*, vol. I. pls. viii. 25 (cf. vol. I. p. 100), iv. 52, and xviii. 41. Between the head and the inscription, ornamental gold rivet. Cf. Furtwängler, *op. cit.* vol. III. p. 90.

Inscription. This occupies entire band, between beading, except seal. Scarcely legible toward end of preserved part. Height of letters, 0.002 m.–0.0024 m.

καλος ⋮ ἰμι ⋮ καλας ⋮ ιυϲ(?)

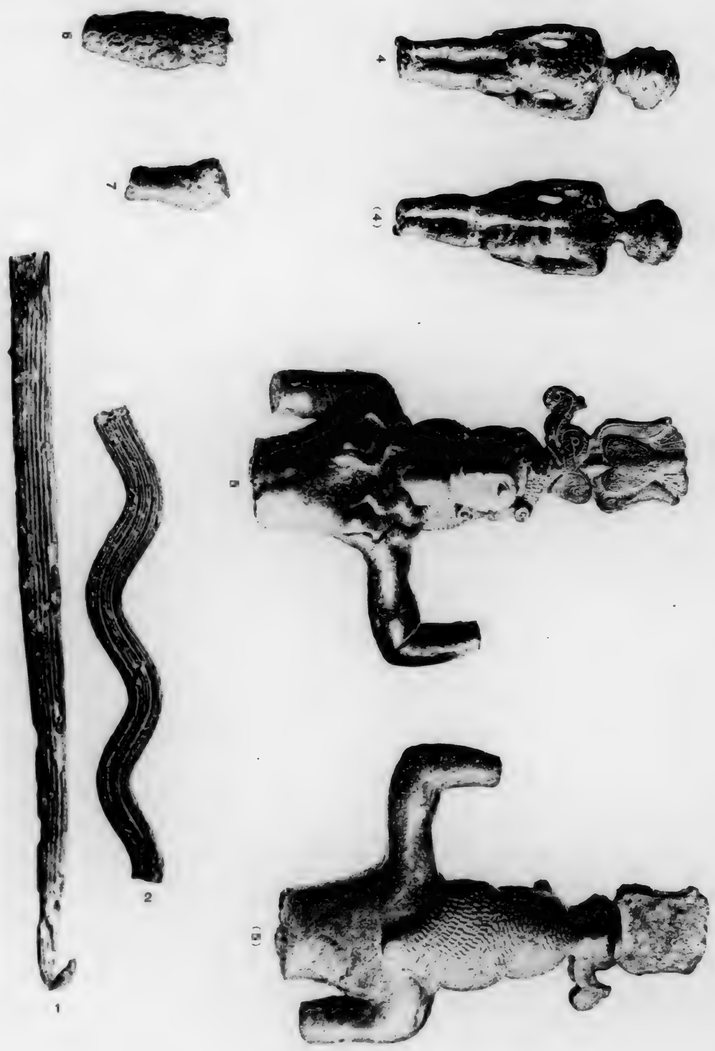
The first sigma has three strokes. Lowest stroke of the second sigma faint and doubtful. The last letter looks like a lunate sigma, but apart from the difficulty in the form of the letter, the reading ἰὼν or ἰωσ- is unintelligible. It is of course useless to think of ὑός, *C. I. A.* IV. b. 373, 100; I. 398, 4 (cf. Meisterhans, *Grammatik d. att. Inschriften*, p. 47, n. 413 a, b. G. Meyer, *Griech. Gram.*[2] § 320). The letter could also be considered as part of a ρ, in which case, instead of reading ⋮IVC after καλᾶϛ, an alternative reading could be adopted, viz., ⋮IF- i. e. Hε̄ρ[ας. At certain times and in a certain light this seems almost plausible. In any case some word like δακτύλιος is probably to be supplied with καλός, and the inscription will have nothing to do with the καλός-inscriptions on vases.[1]

[1] Published with the Bronzes because of the inscription. Impressions and photographs thereof, together with some notes, were kindly furnished by Professor R. B. Richardson.

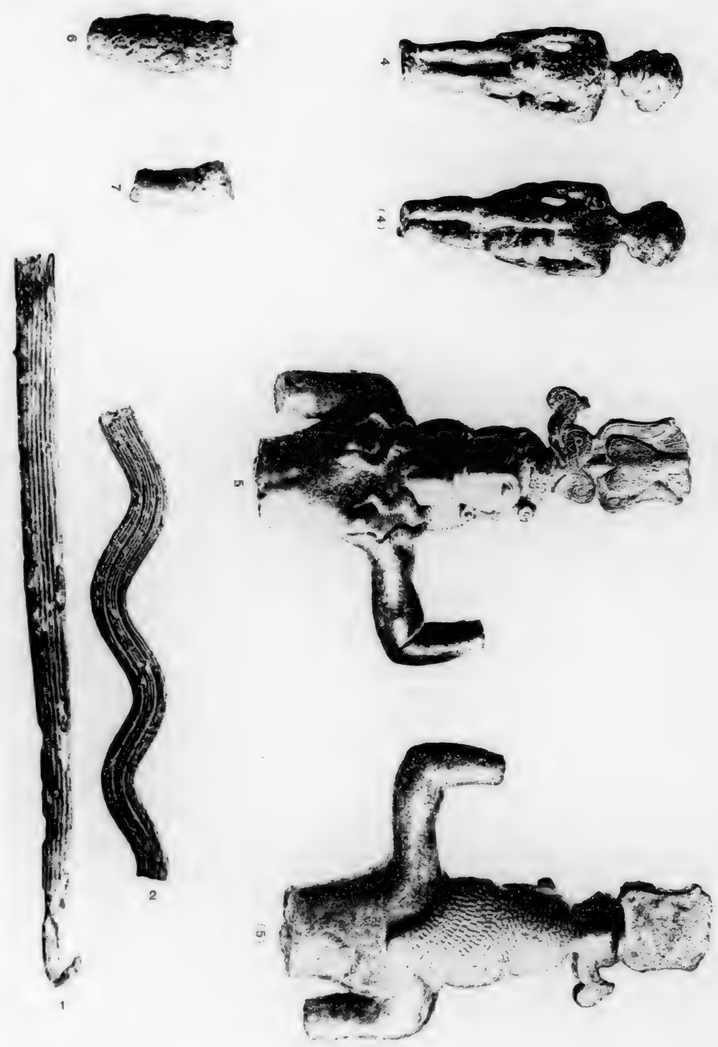
SILVER PIN IN BRITISH MUSEUM, SAID TO BE FROM NEAR THE HERAEUM.

Plate CXXXVII. For description, see after No. **490**, p. 223, and for inscription, *Insc. Argol.* (*I. G.* IV.), No. 508, and cf. No. **2239** above.

[1] Cf. Rolfe, 'An Inscribed Kotylos from Boeotia,' *Harvard Studies in Class. Philol.* II. pp. 89 ff.



BRONZES.—FRAGMENTS OF STATUES. STATUETTES.



BRONZES.—FRAGMENTS OF STATUES. STATUETTES.



7



(3)

BRONZES.—STATUETTE



8



9

10



11



12

BRONZES.— ANIMAL FIGURINES





BRONZES.—STATUETTE



8



9

10



11



12

BRONZES.— ANIMAL FIGURINES



13



14



15



16



19



(19)



(20)



20

BRONZES.— ANIMAL FIGURINES.



18



17



21



22



(22)

BRONZES.— ANIMAL FIGURINES.



13



14



15



16



19



(19)



(20)



20

BRONZES.— ANIMAL FIGURINES.



18





17



21



22



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BRONZES.— ANIMAL FIGURINES.



BRONZES.— ANIMAL FIGURINES



BRONZES.— ANIMAL FIGURINES



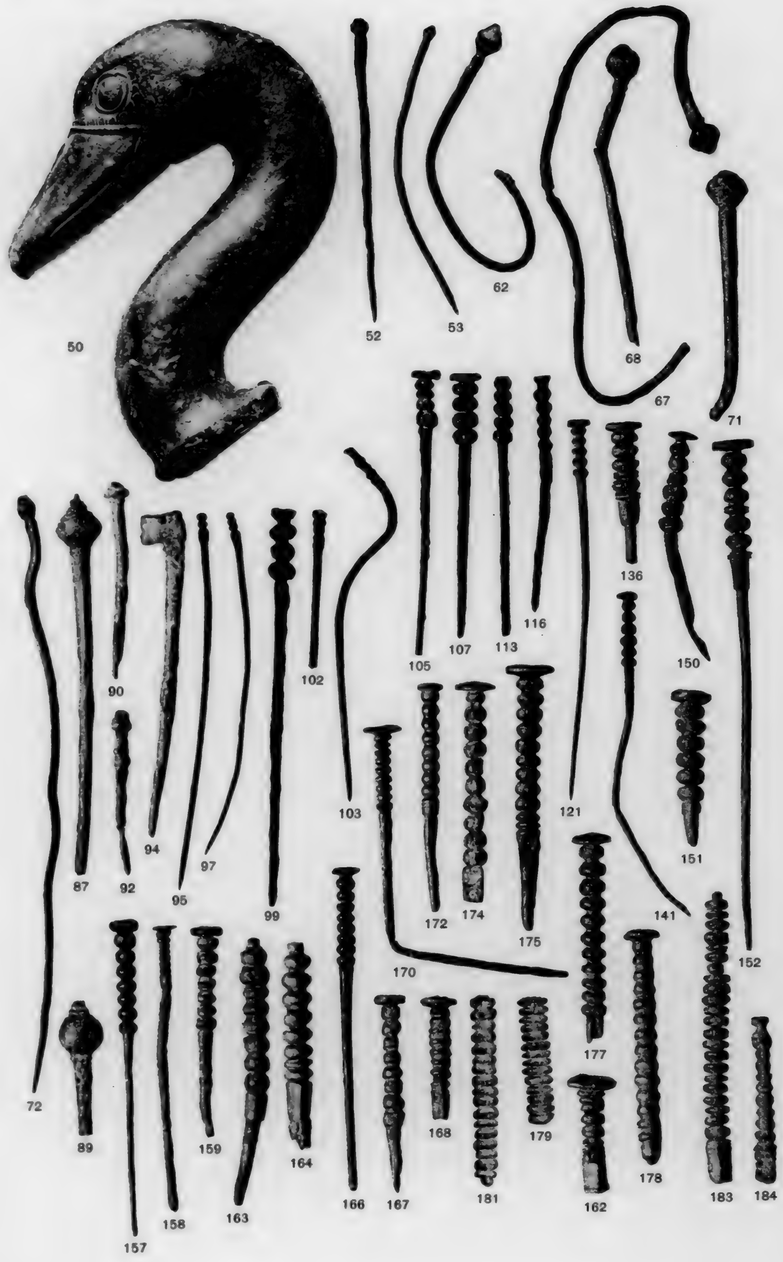
BRONZES.— ANIMAL FIGURINES



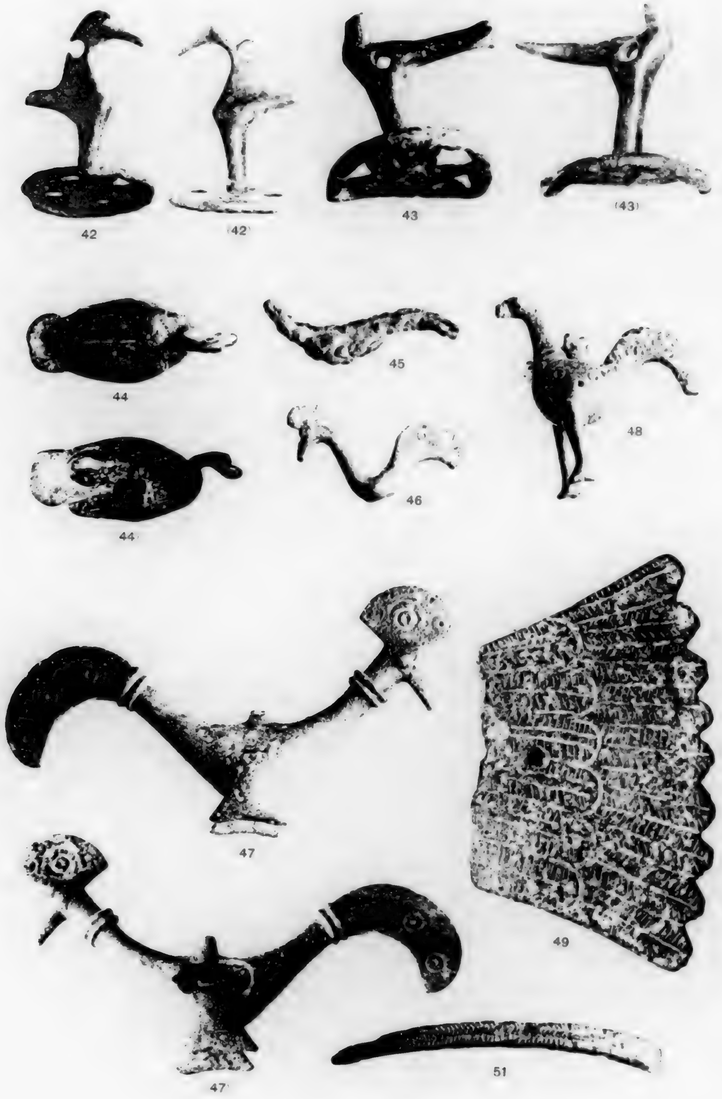
BRONZES.— ANIMAL FIGURINES



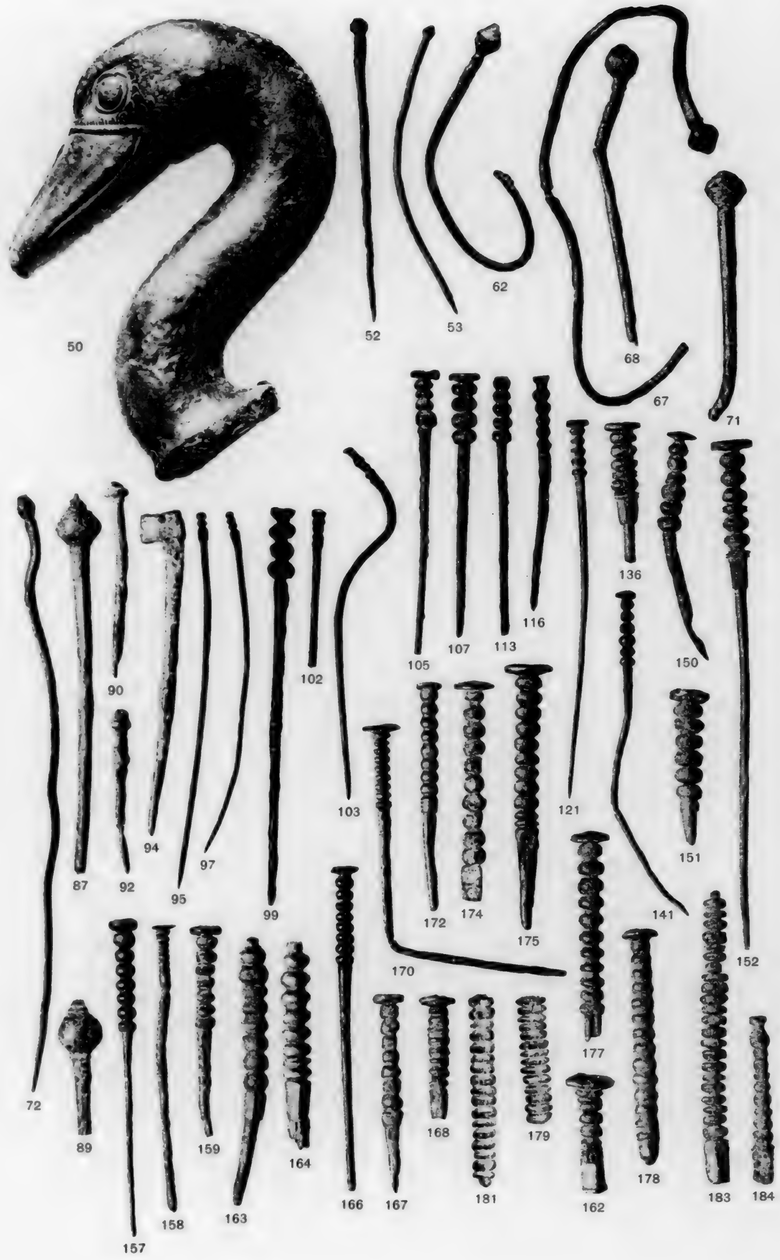
BRONZES.— ANIMAL FIGURINES.



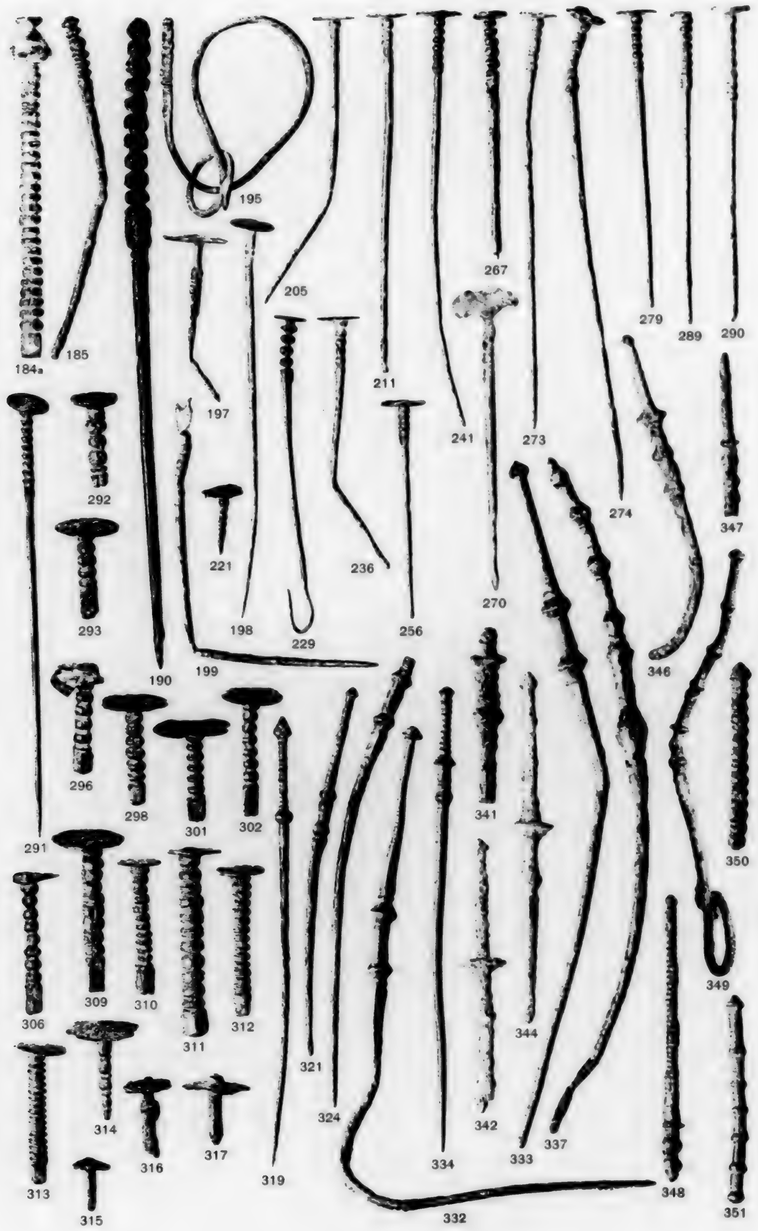
BRONZES.—ANIMAL FIGURINES, STRAIGHT PINS



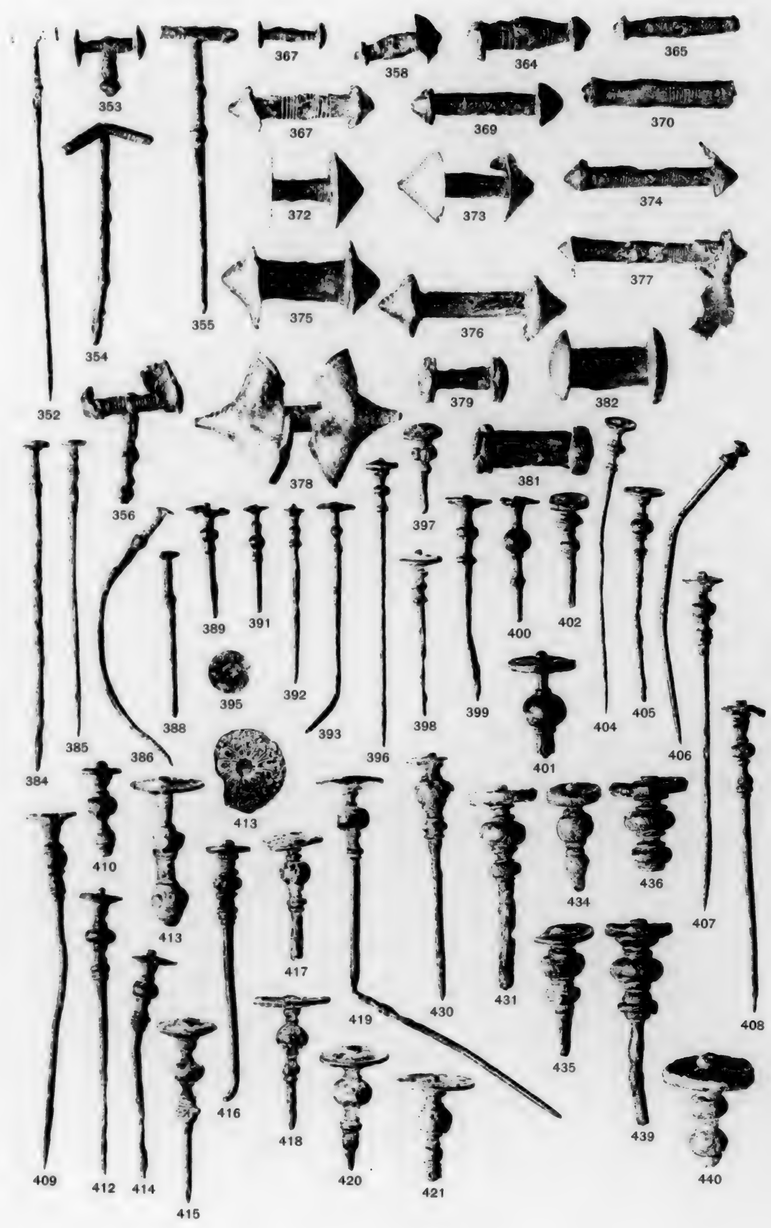
BRONZES.— ANIMAL FIGURINES.



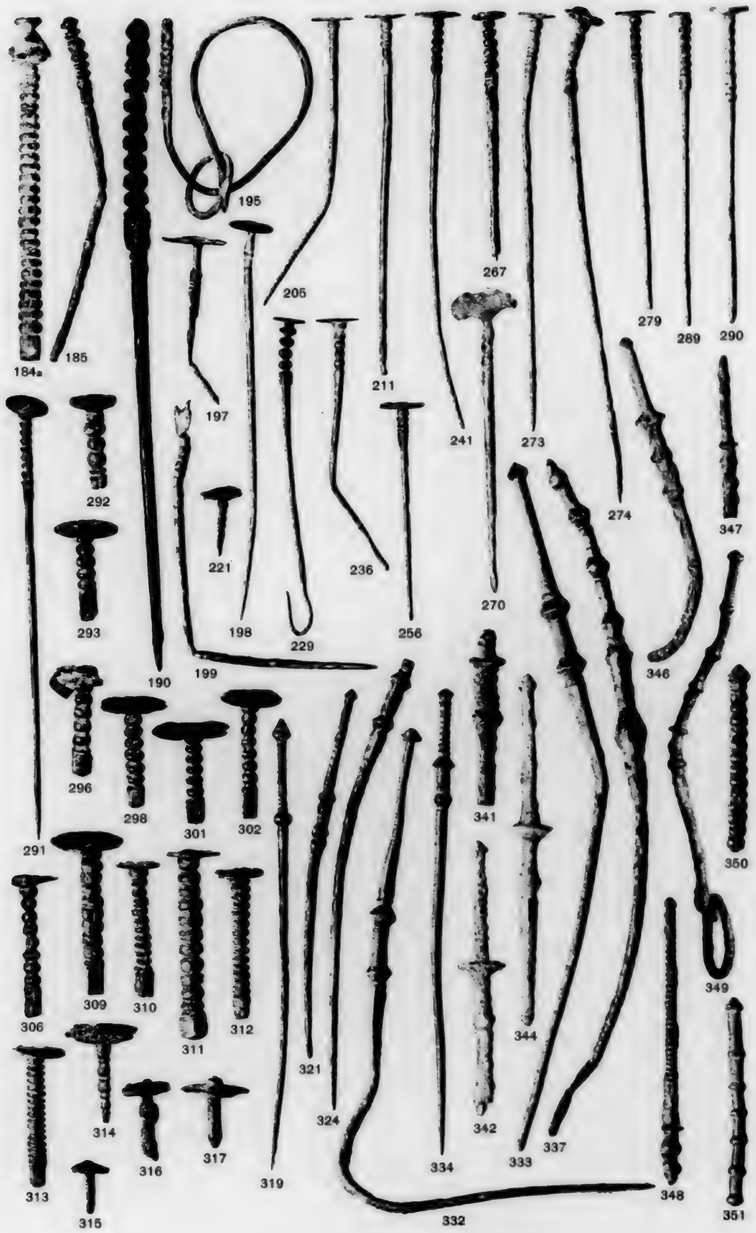
BRONZES.—ANIMAL FIGURINES, STRAIGHT PINS



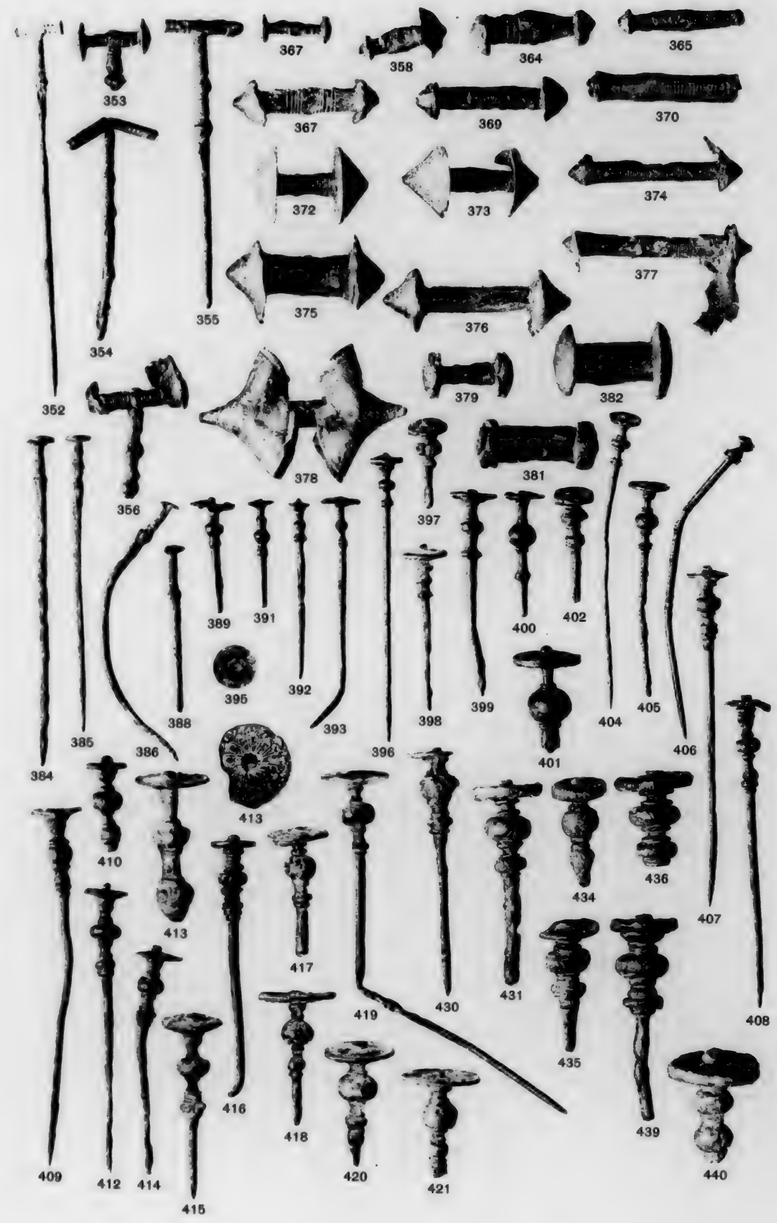
BRONZES.—STRAIGHT PINS



BRONZES.—STRAIGHT PINS



BRONZES.—STRAIGHT PINS



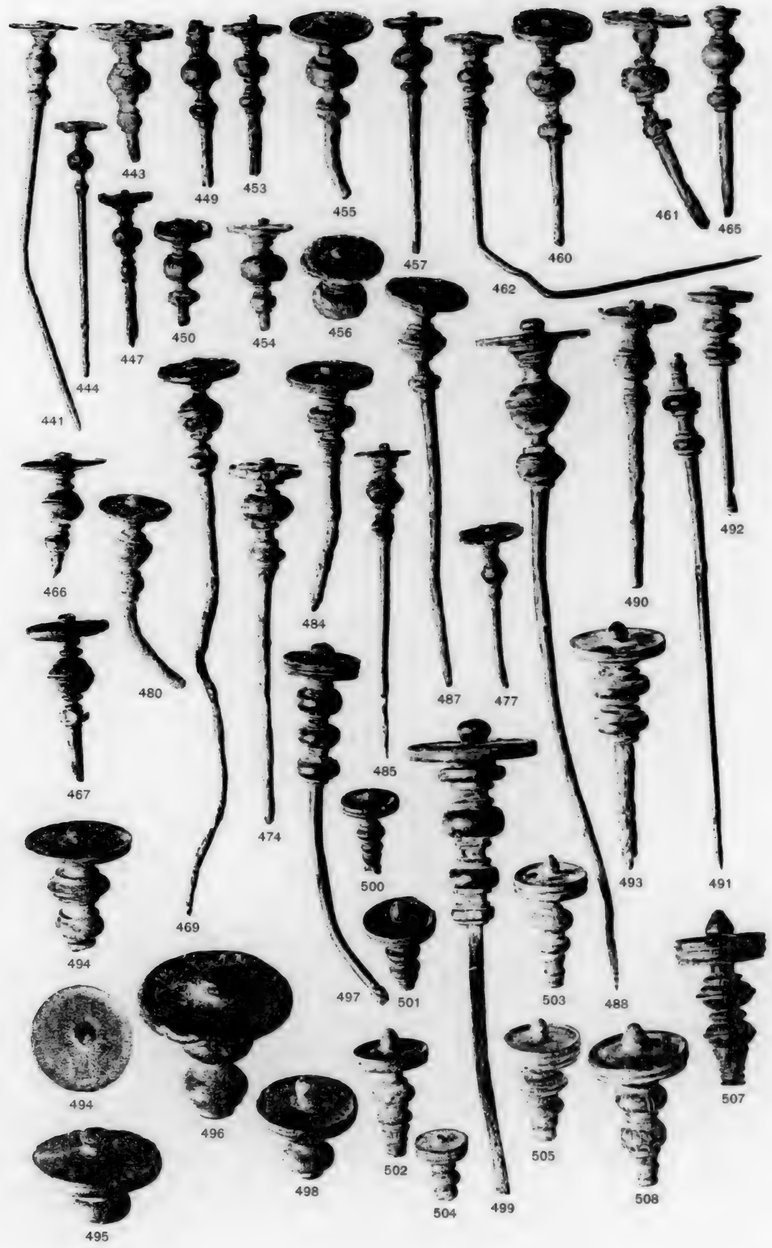
BRONZES.—STRAIGHT PINS



BRONZES.—STRAIGHT PINS.



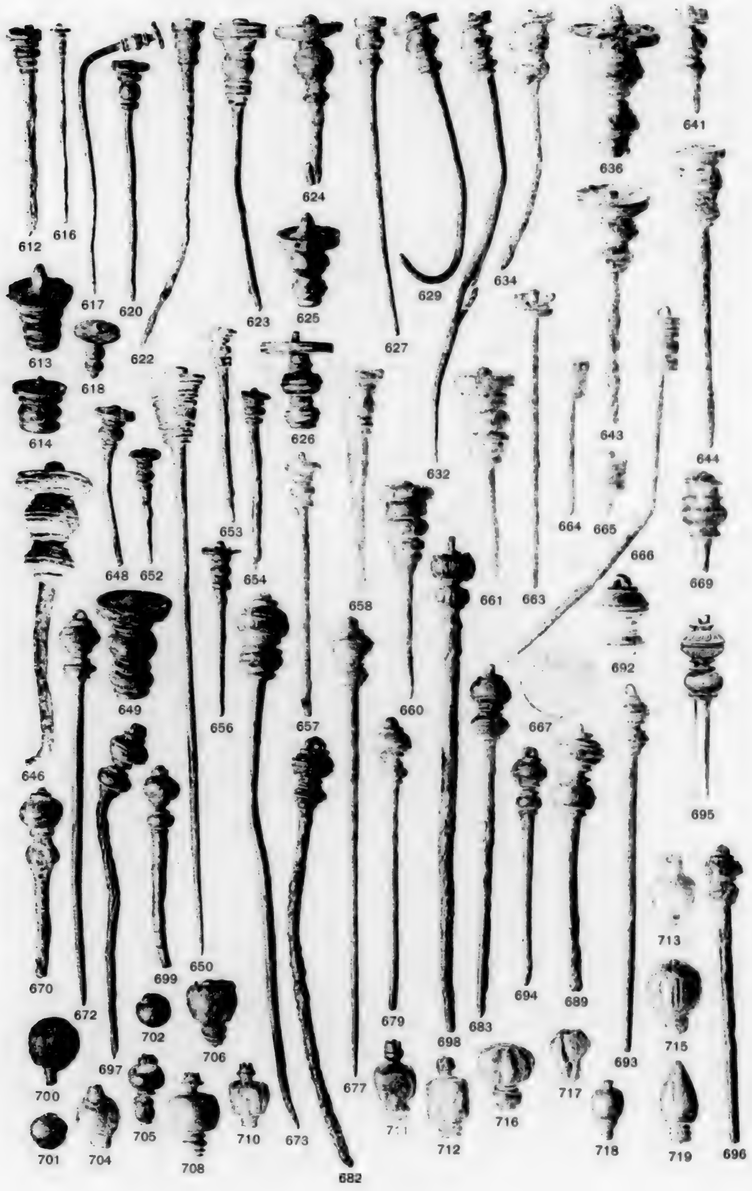
BRONZES.—STRAIGHT PINS.



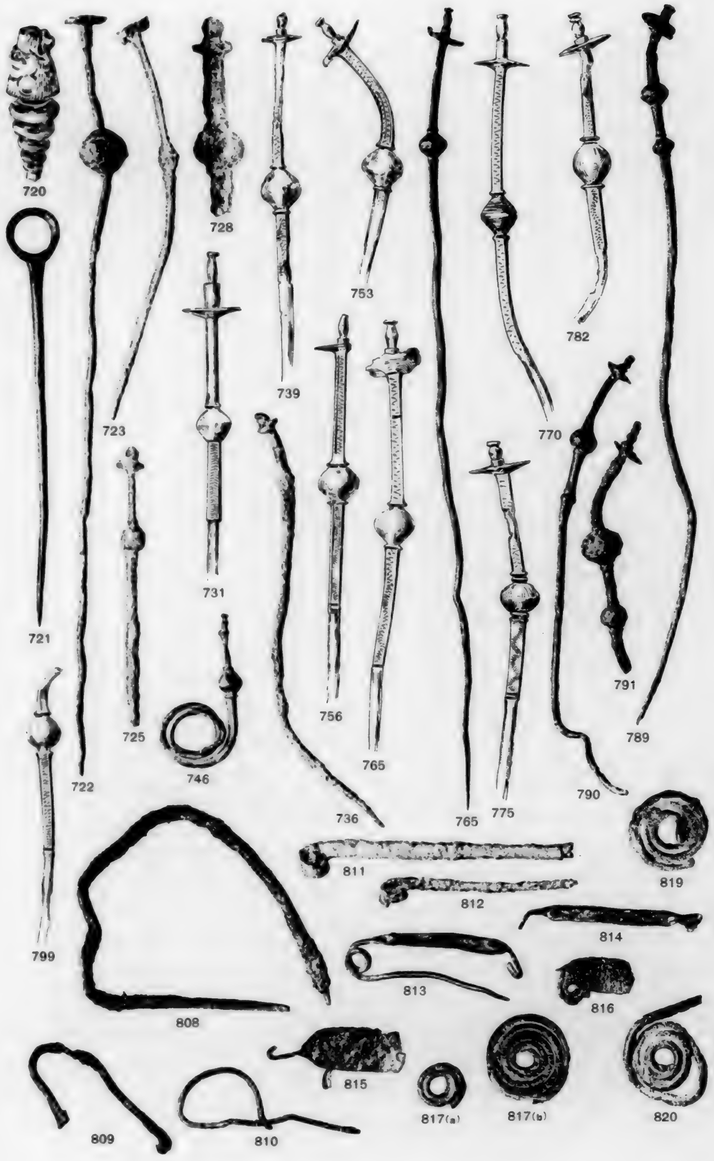
BRONZES.—STRAIGHT PINS.



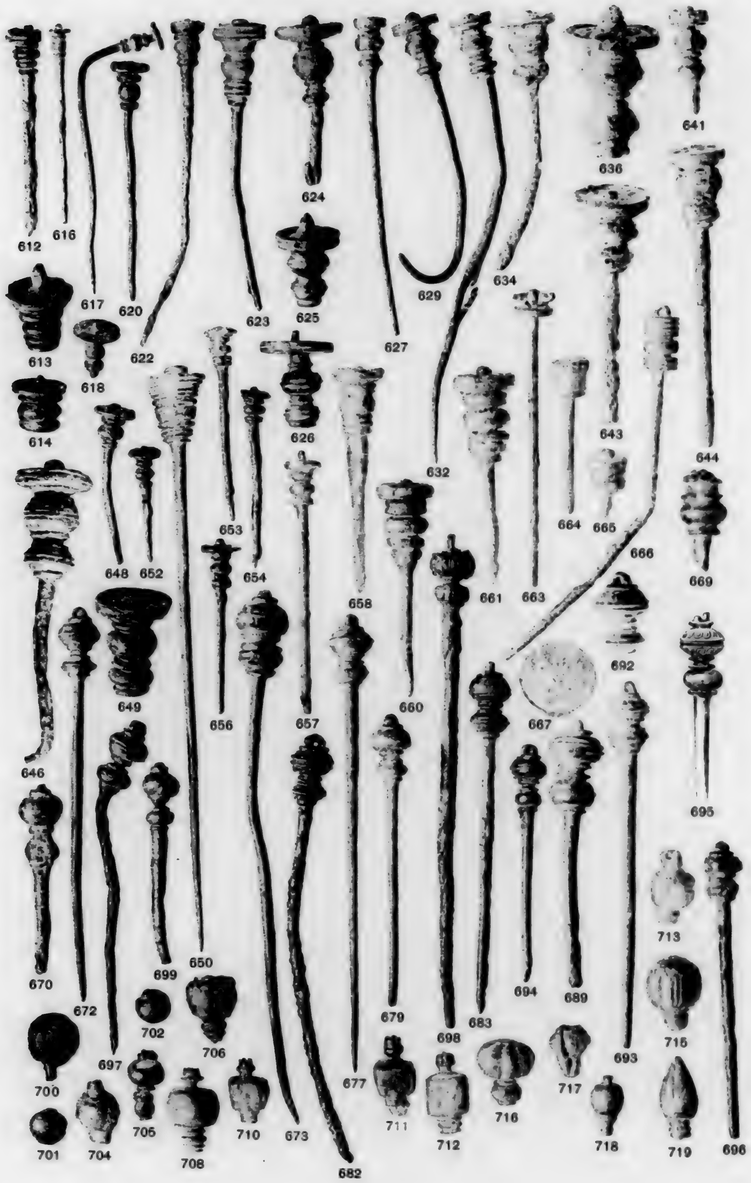
BRONZES.—STRAIGHT PINS.



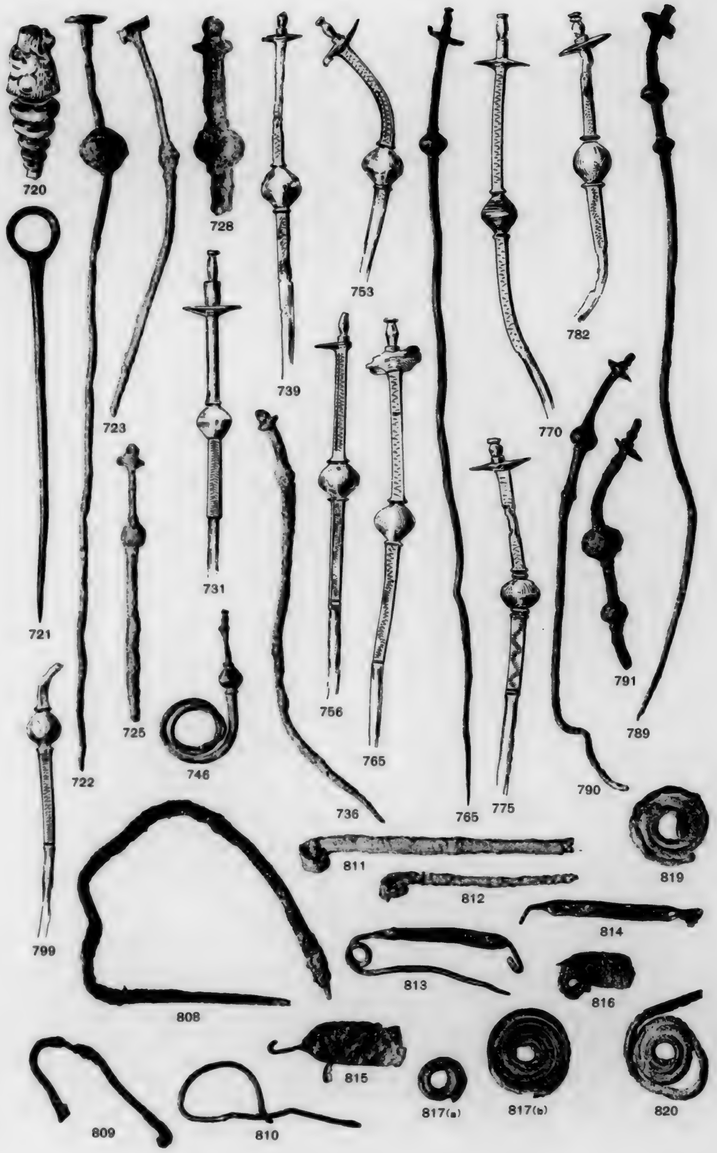
BRONZES.—STRAIGHT PINS



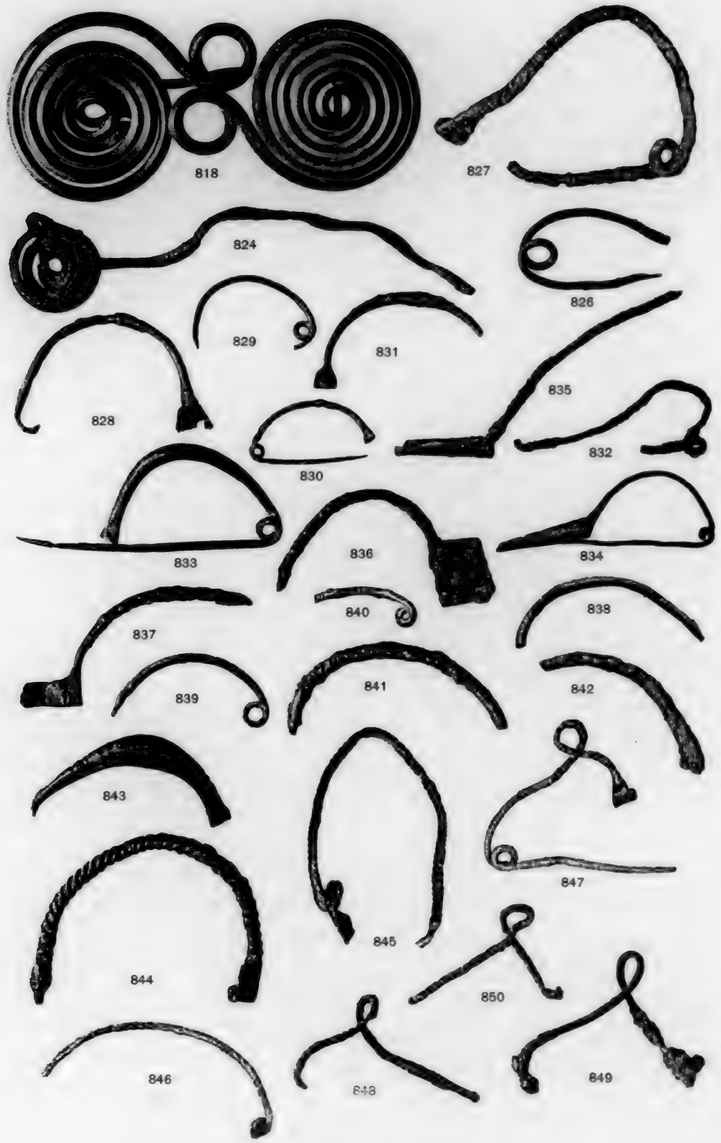
BRONZES.—STRAIGHT PINS. SAFETY PINS



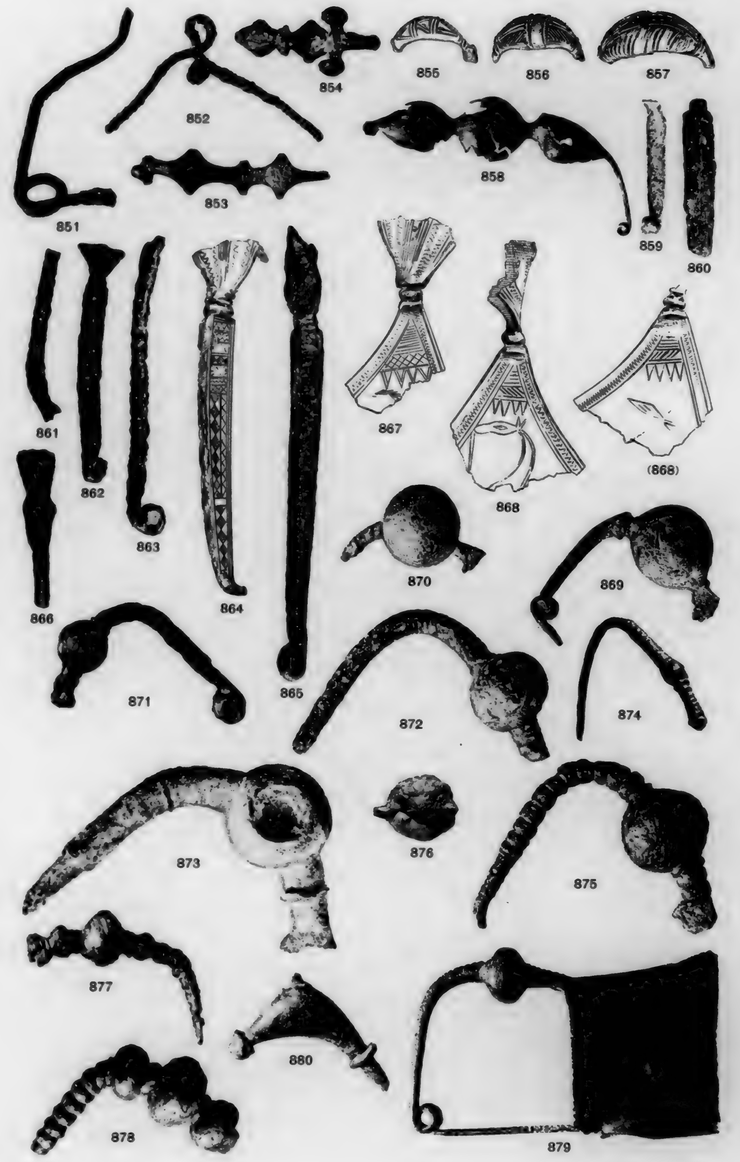
BRONZES.—STRAIGHT PINS



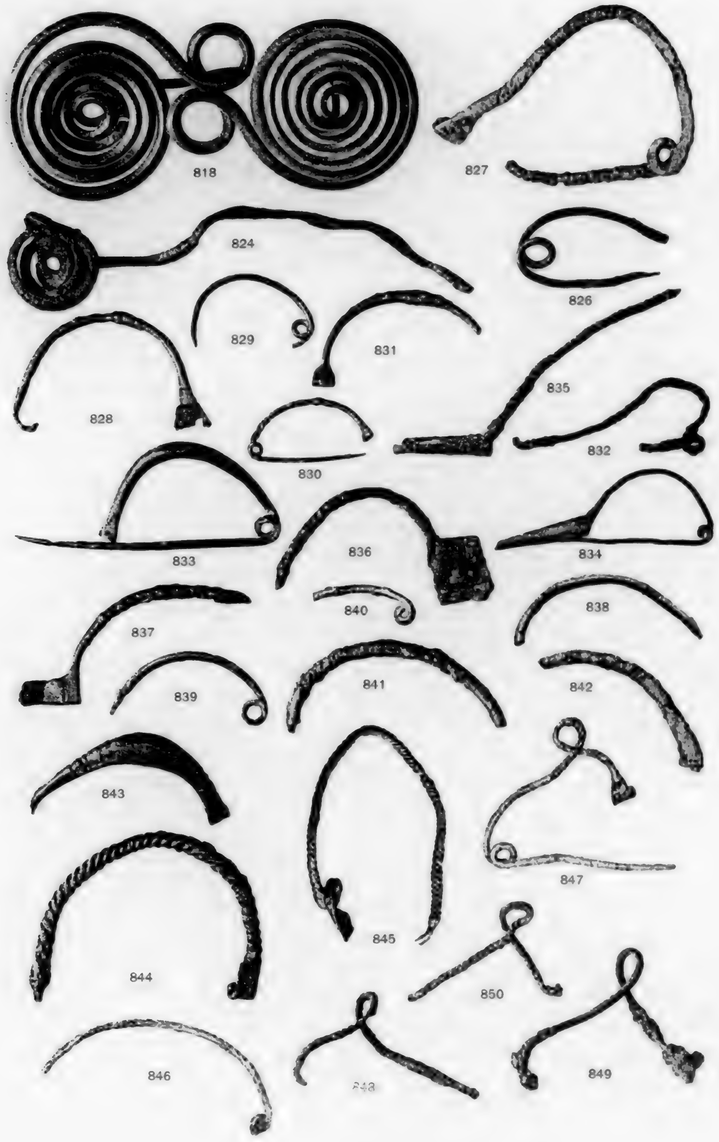
BRONZES.—STRAIGHT PINS. SAFETY PINS



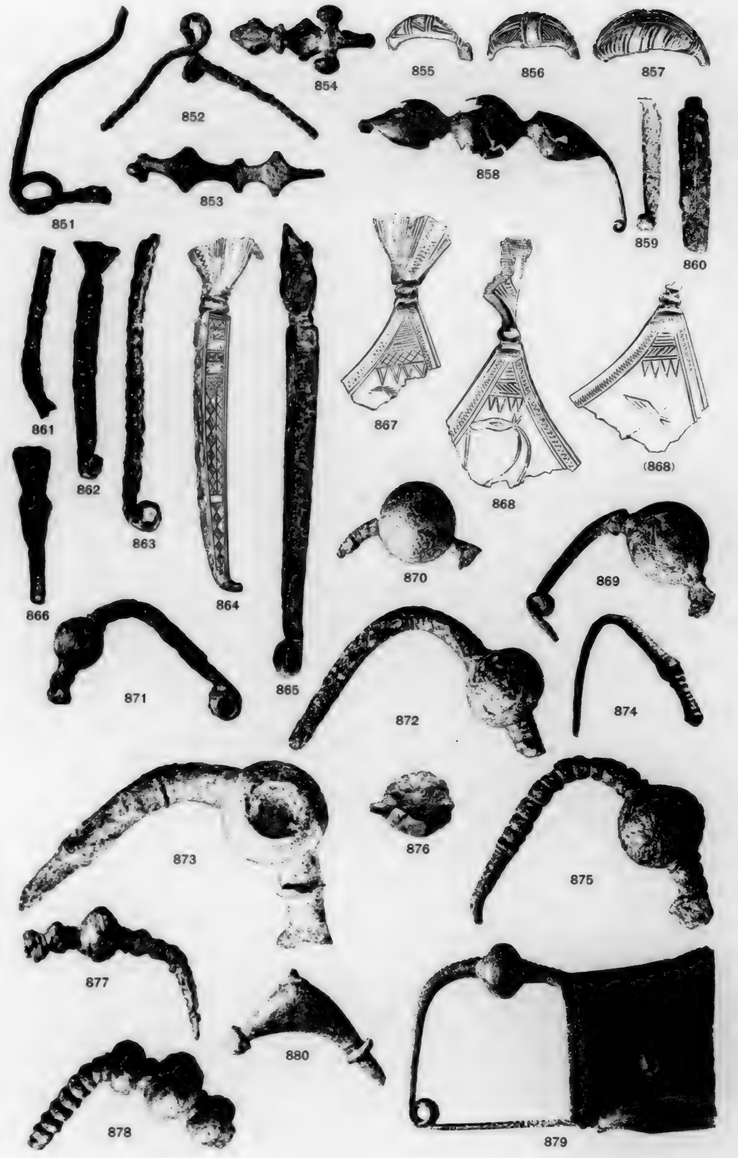
BRONZES.— SAFETY PINS



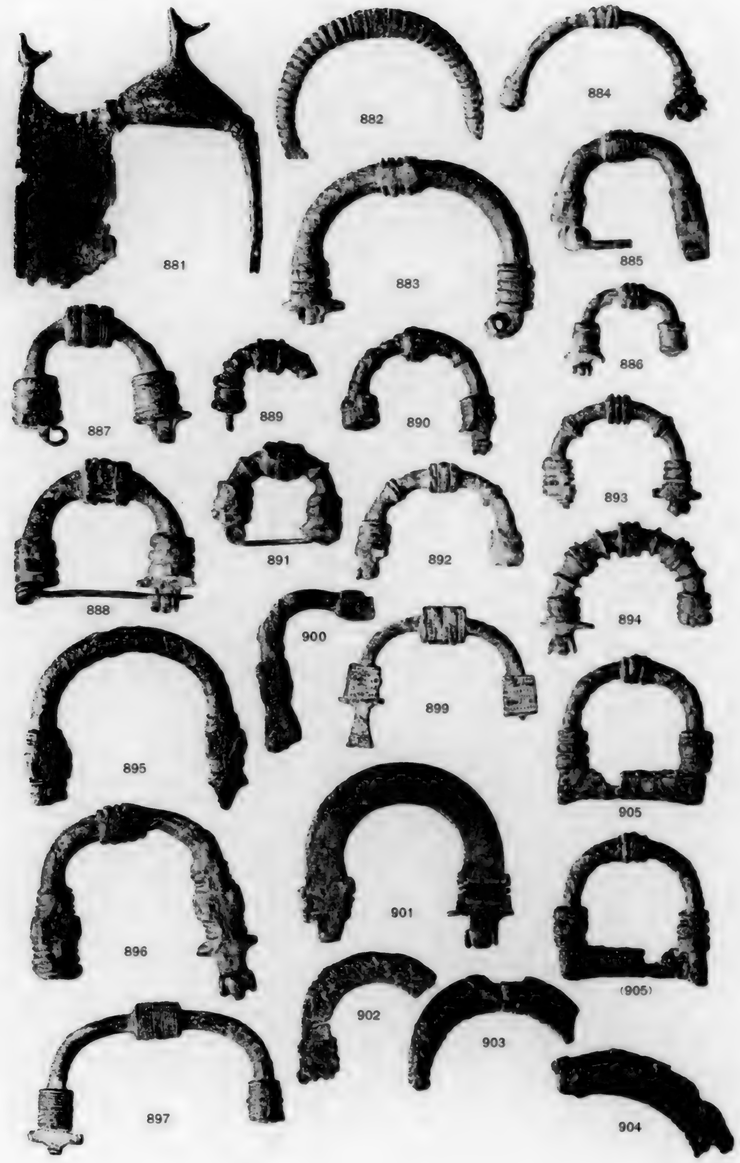
BRONZES.—SAFETY PINS



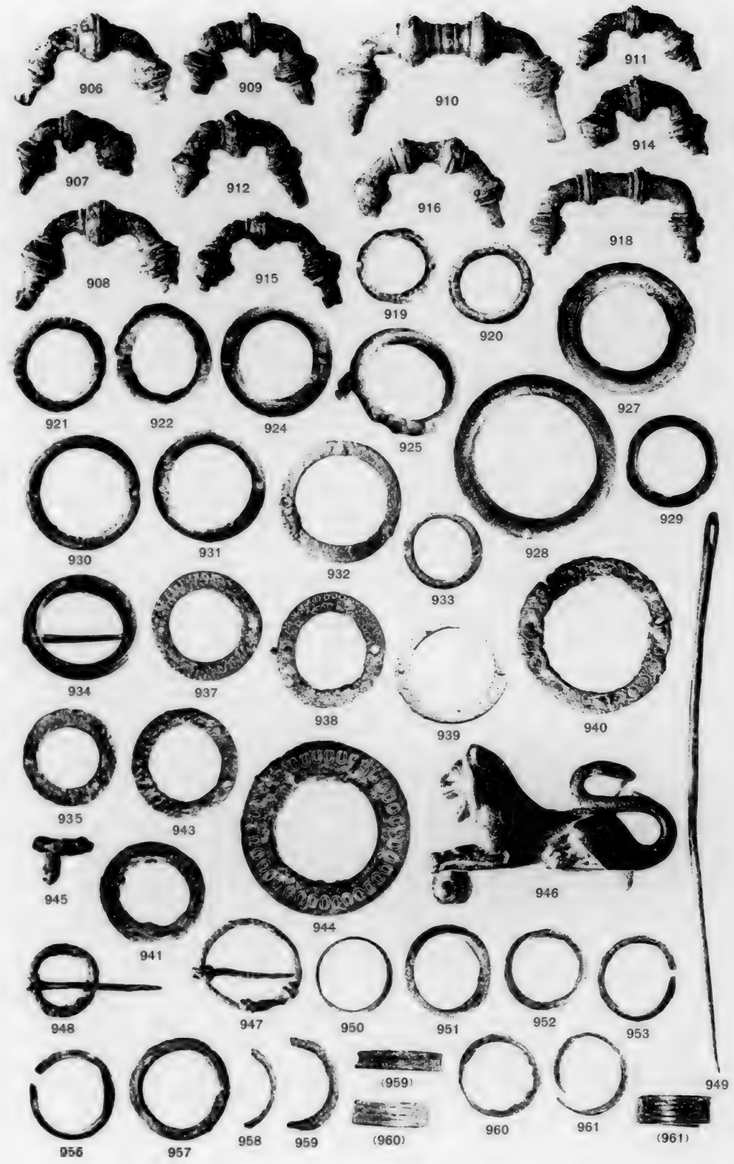
BRONZES.— SAFETY PINS



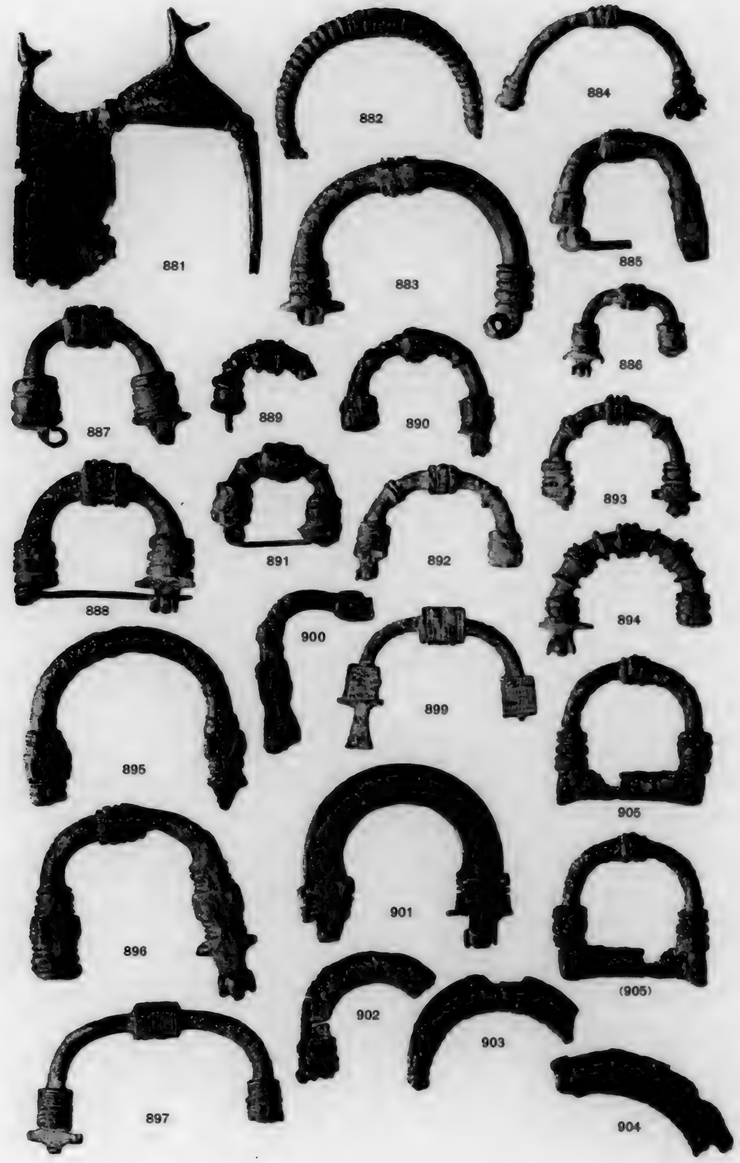
BRONZES.—SAFETY PINS



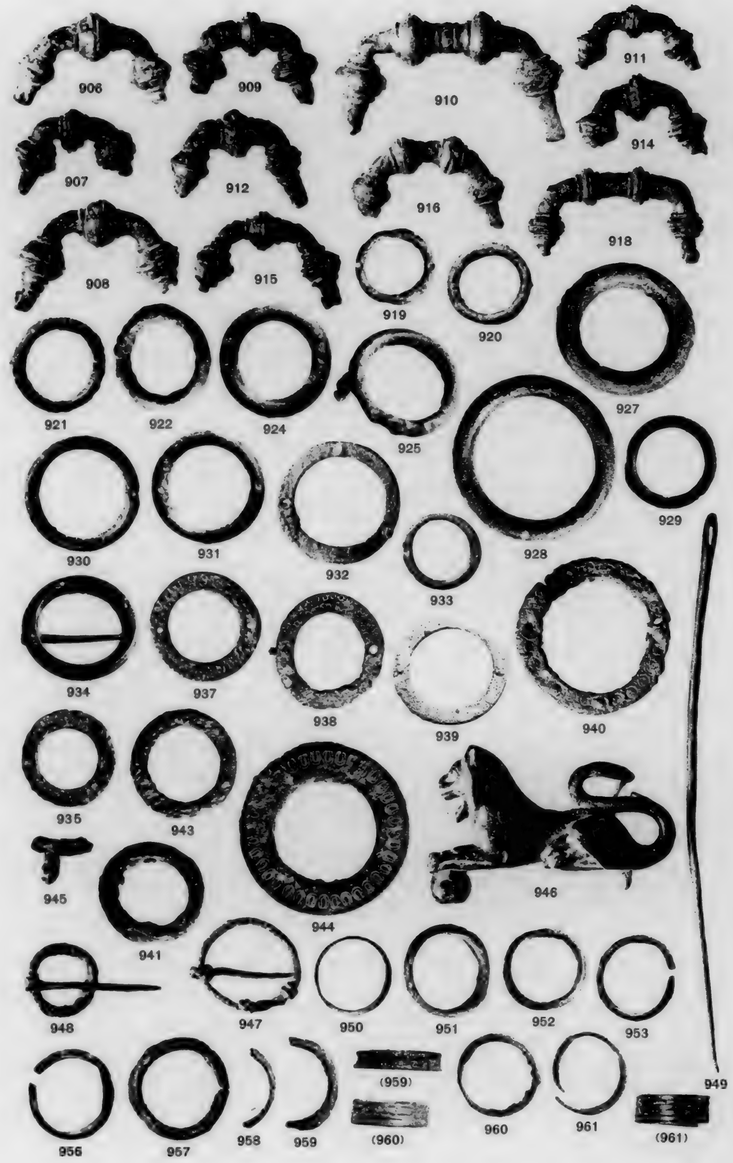
BRONZES.—SAFETY PINS



BRONZES.—SAFETY PINS ETC. NEEDLE, FINGER-RINGS



BRONZES.—SAFETY PINS



BRONZES.—SAFETY PINS ETC. NEEDLE, FINGER-RINGS



BRONZES.—FINGER-RINGS AND BRACELETS



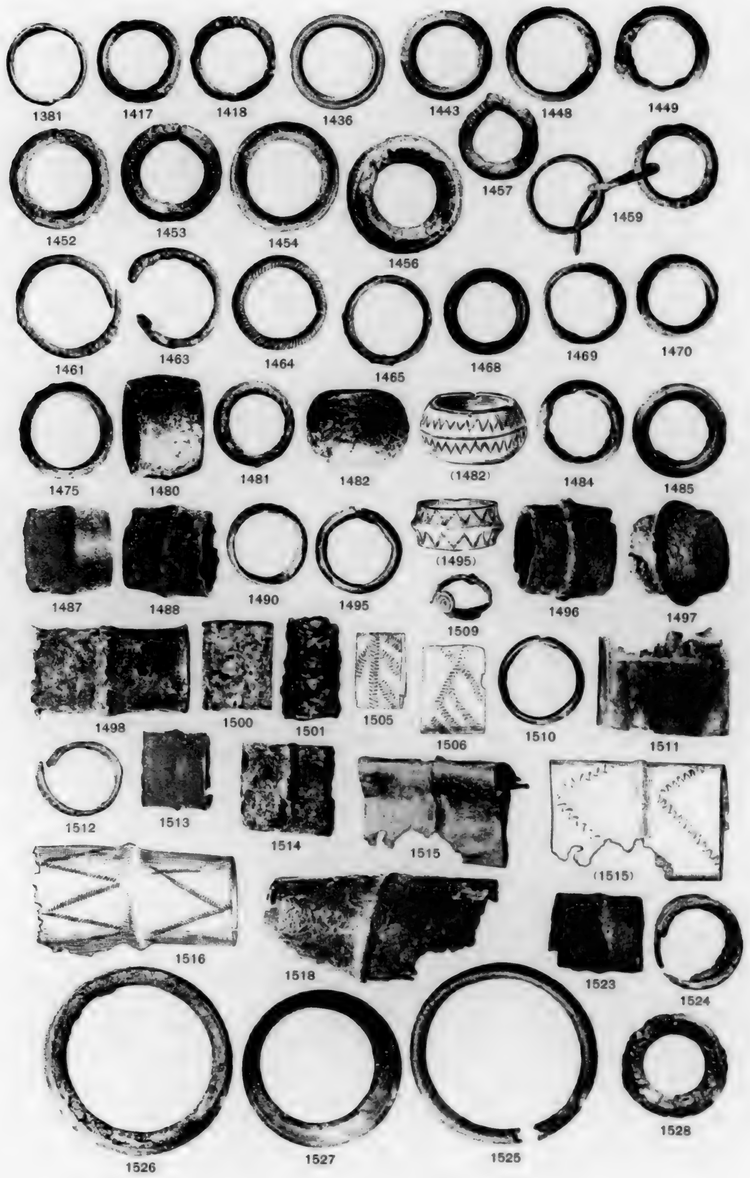
BRONZES.—DECORATIVE RINGS



BRONZES.—FINGER-RINGS AND BRACELETS



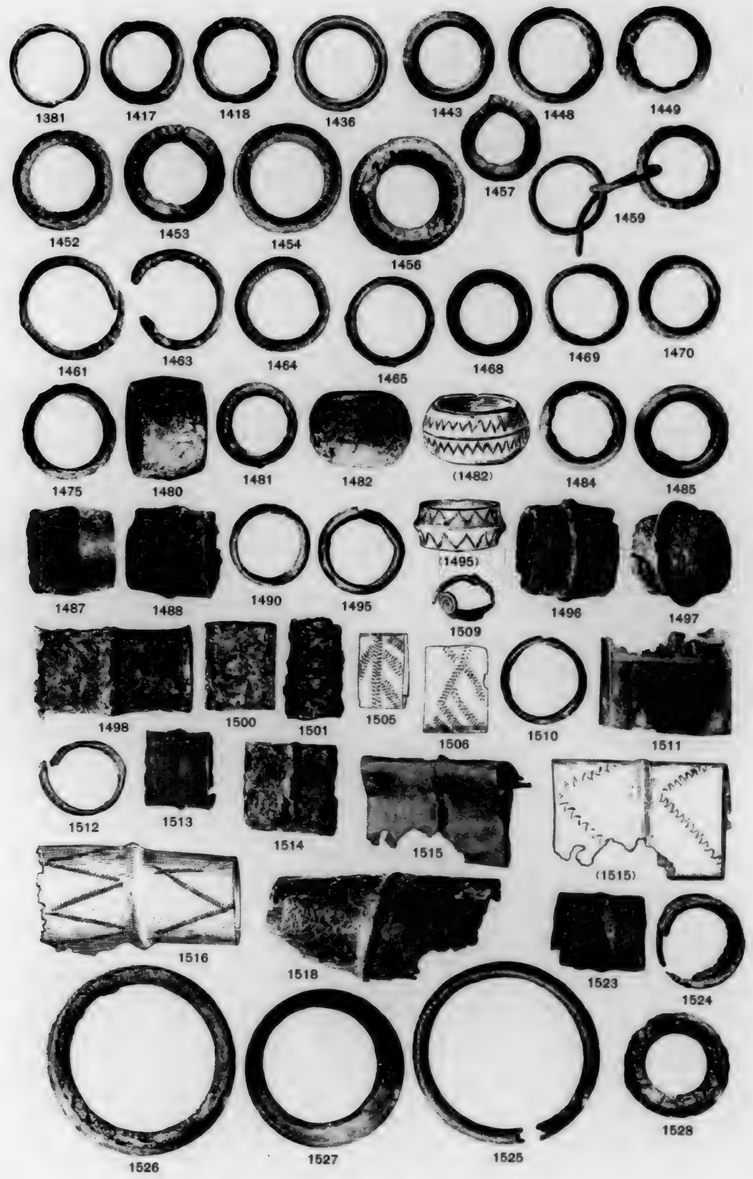
BRONZES.—DECORATIVE RINGS



BRONZES.—DECORATIVE AND STRUCTURAL RINGS



BRONZES.—STRUCTURAL RINGS ETC. BEADS, PENDANTS, MIRRORS



BRONZES.—DECORATIVE AND STRUCTURAL RINGS



BRONZES.—STRUCTURAL RINGS ETC. BEADS, PENDANTS, MIRRORS



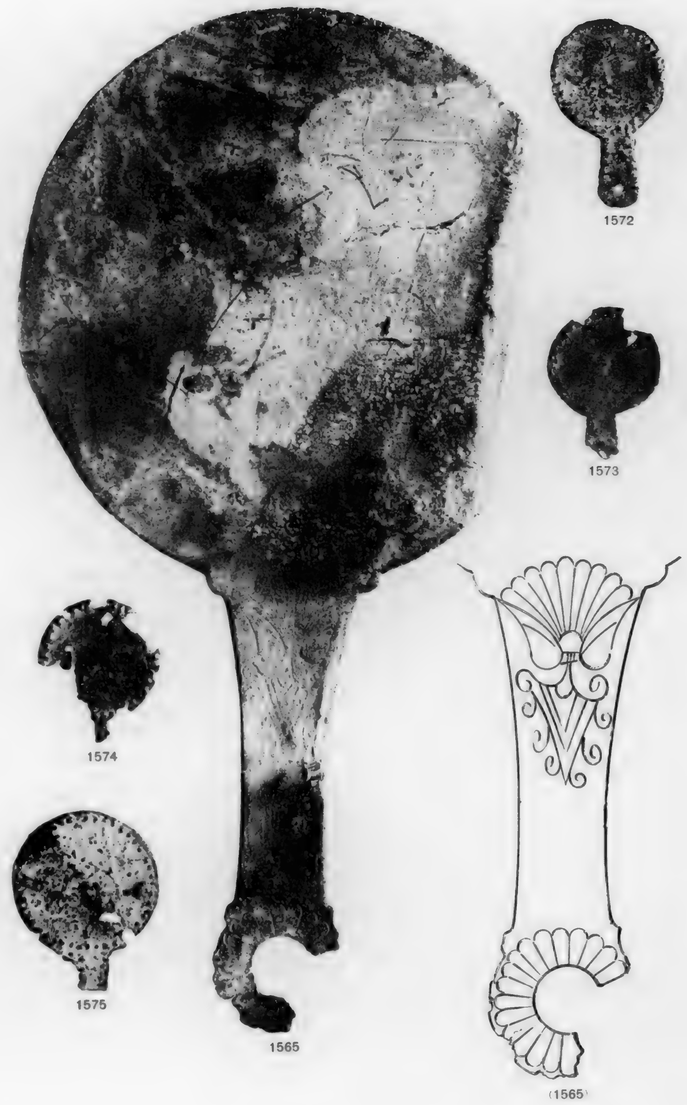
BRONZES.—MIRRORS



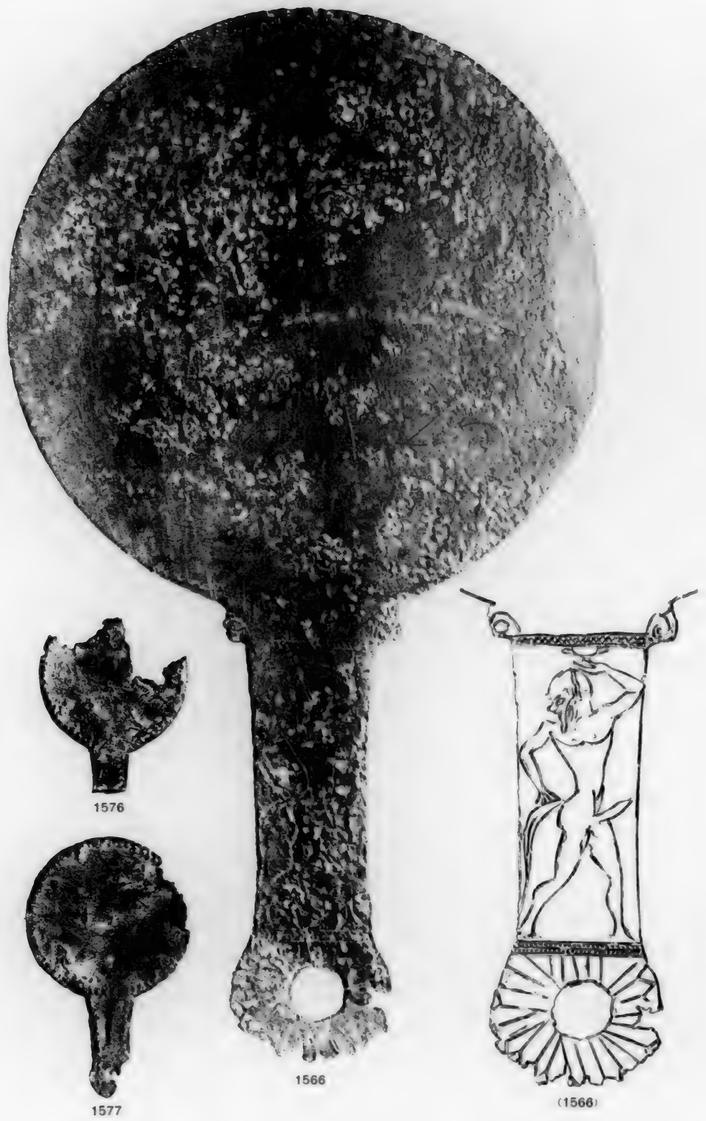
BRONZES.—MIRRORS



BRONZES.—MIRRORS



BRONZES.—MIRRORS



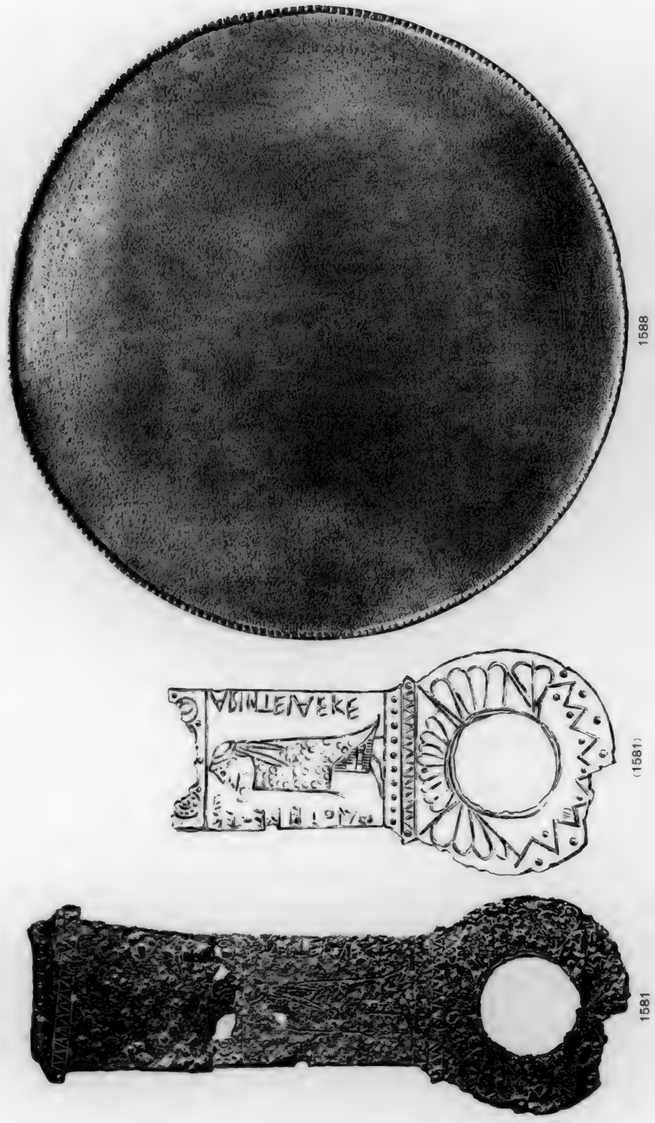
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(1566)

BRONZES.—MIRRORS

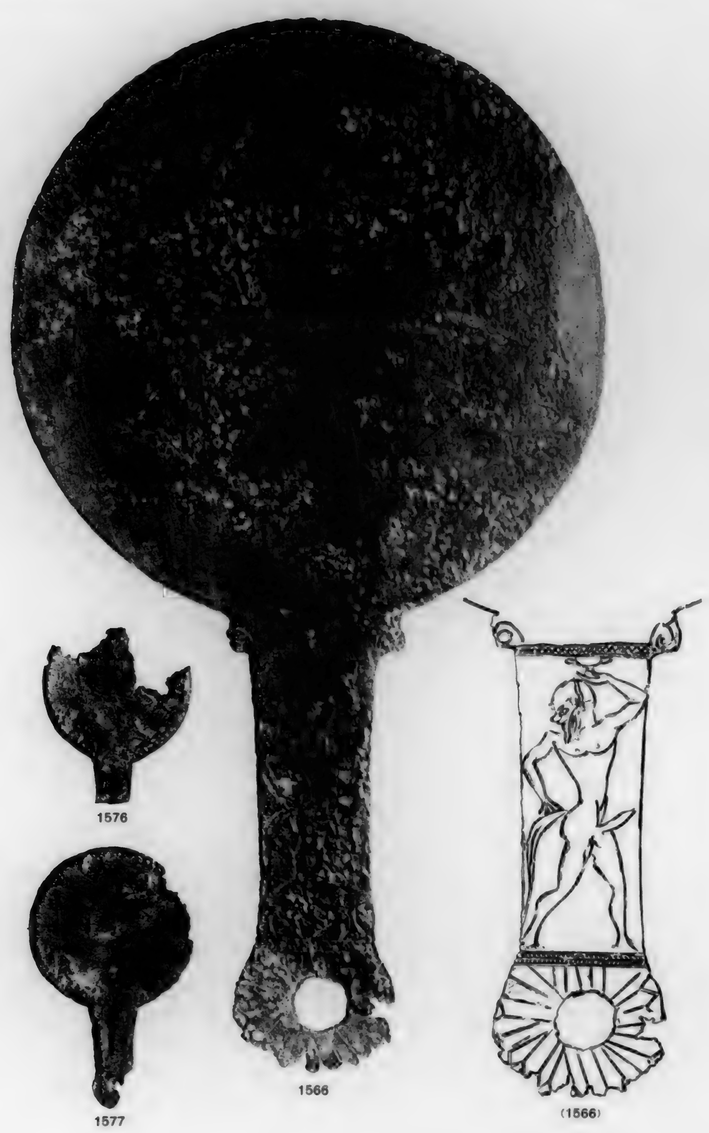


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(1581)

1581

BRONZES.—MIRRORS



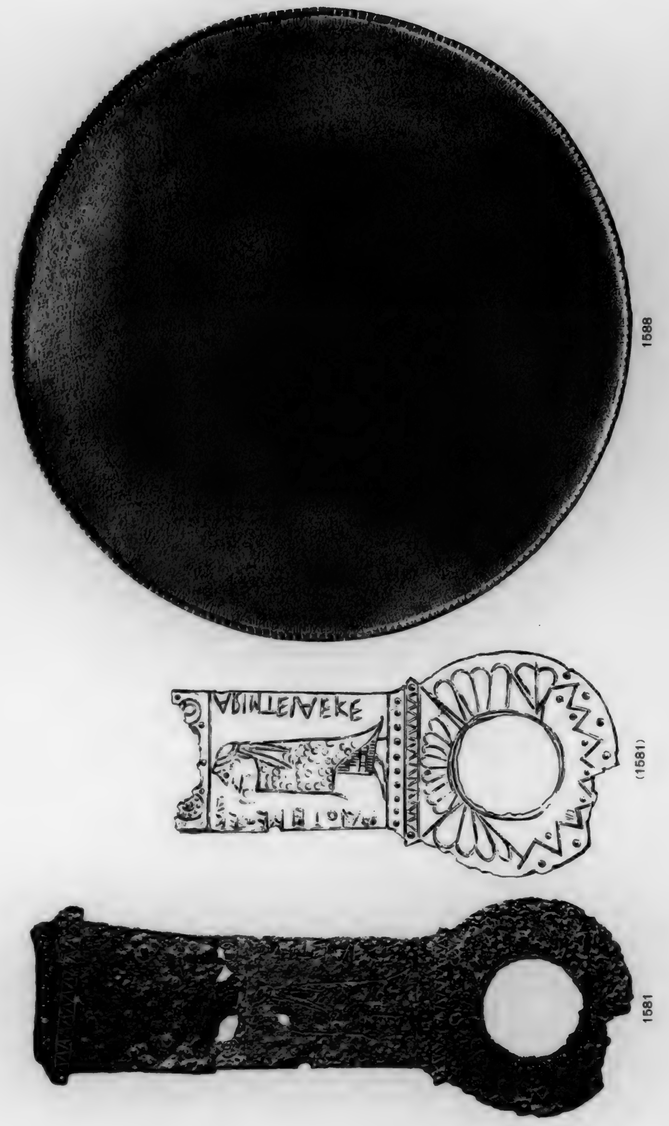
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BRONZES.—MIRRORS



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(1581)

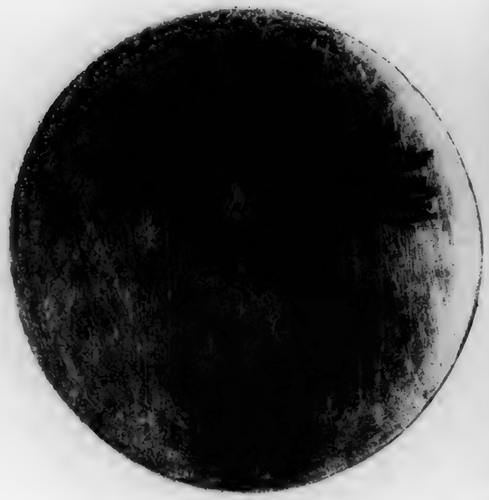
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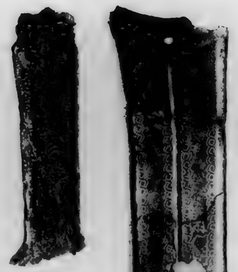


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BRONZES.—MIRROR



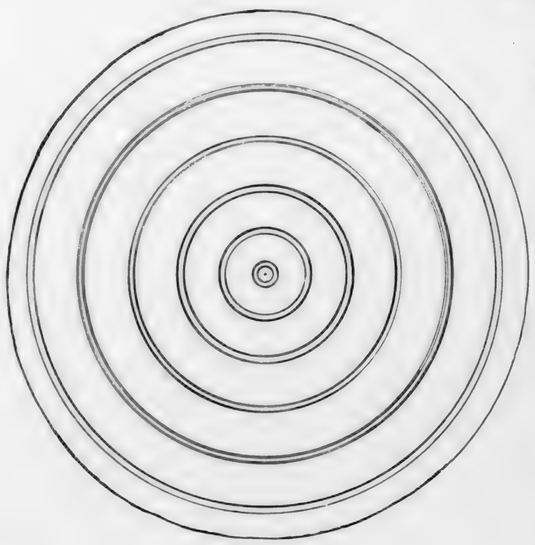
1588. back.



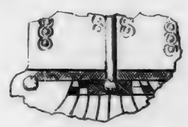
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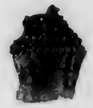
(1588. back.)



(1587)



1589



1589a

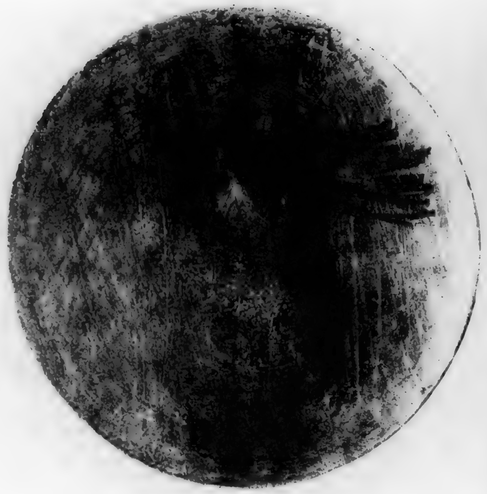
BRONZES.—MIRRORS





1588

BRONZES.—MIRROR



1588. back.



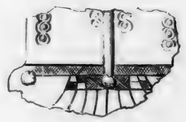
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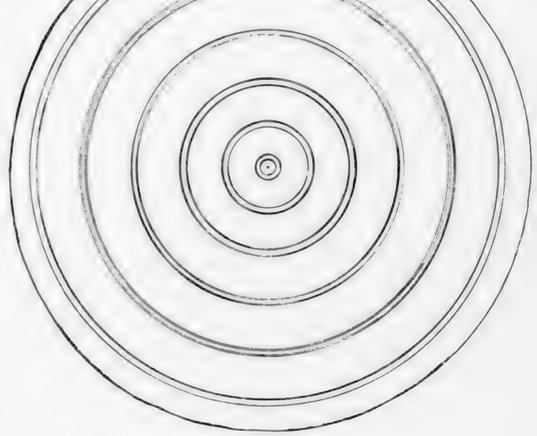
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1587



(1587)



1588. back.)

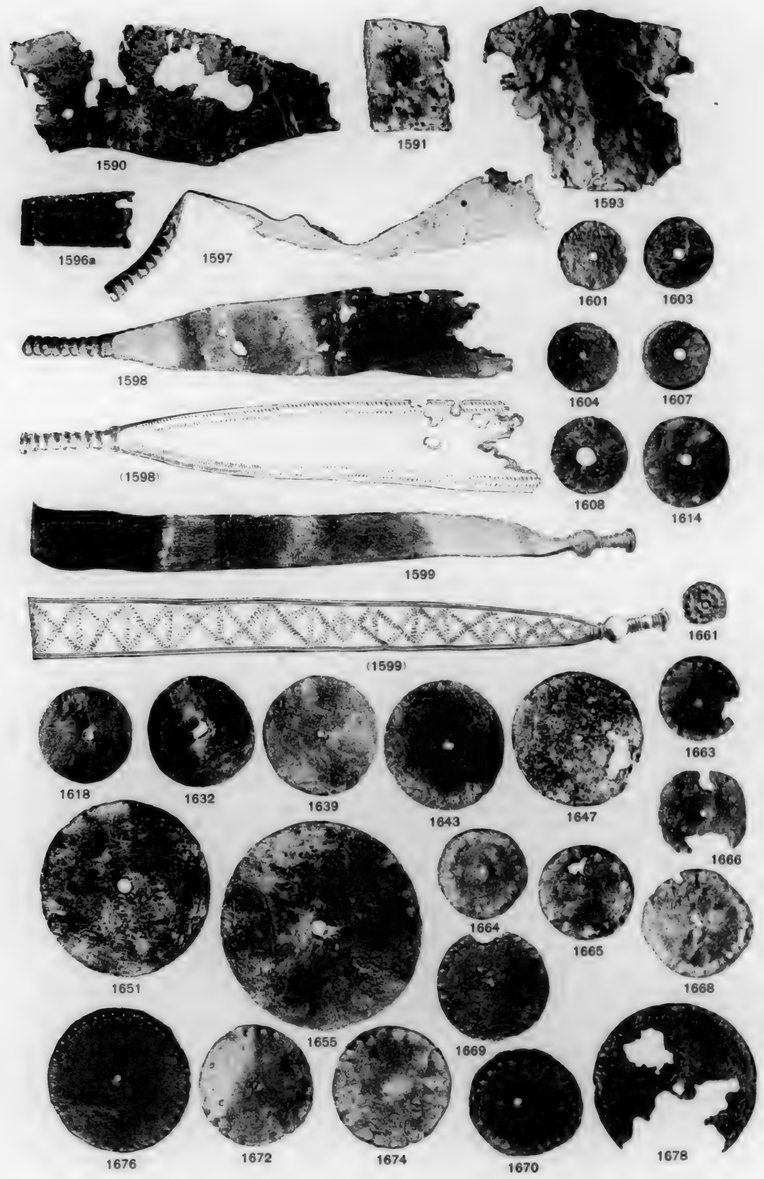


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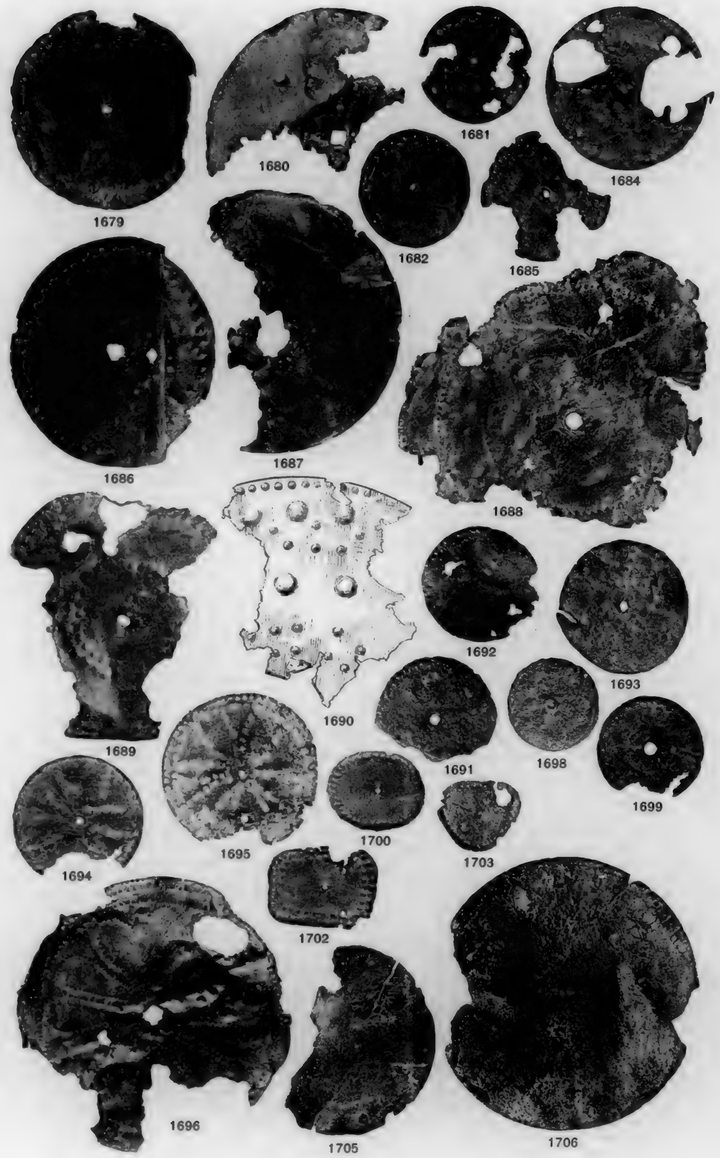


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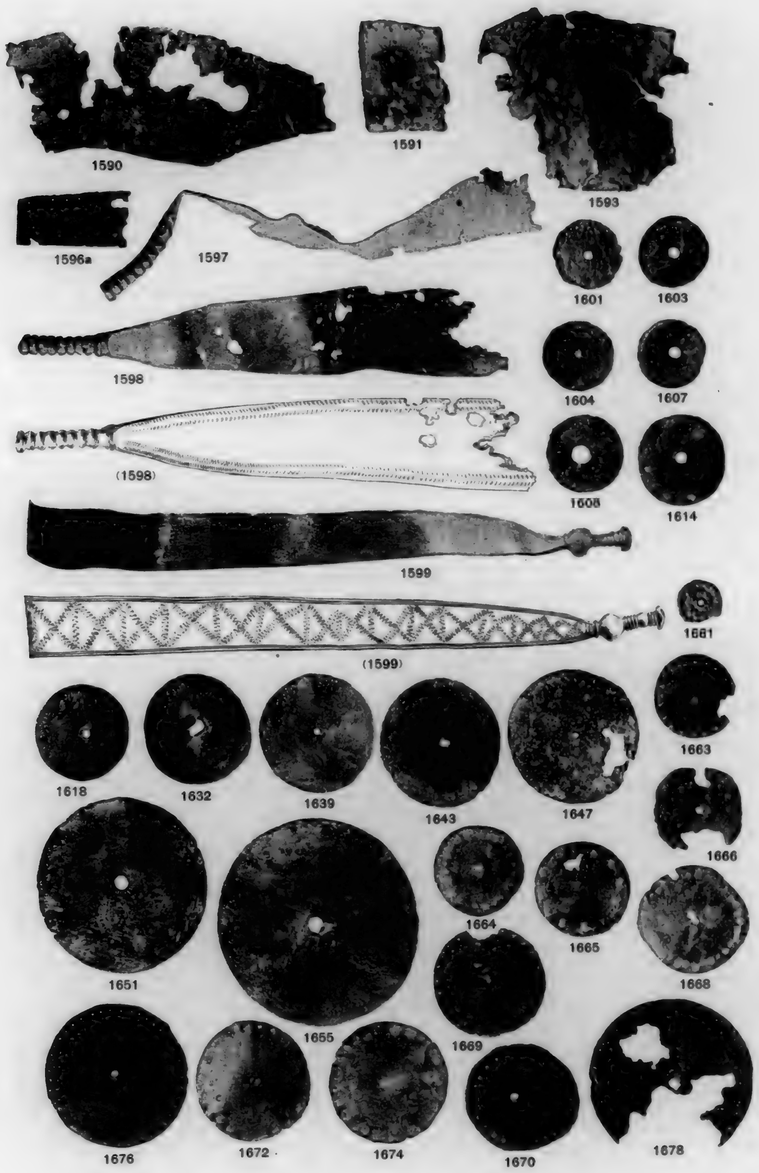
BRONZES.—MIRRORS



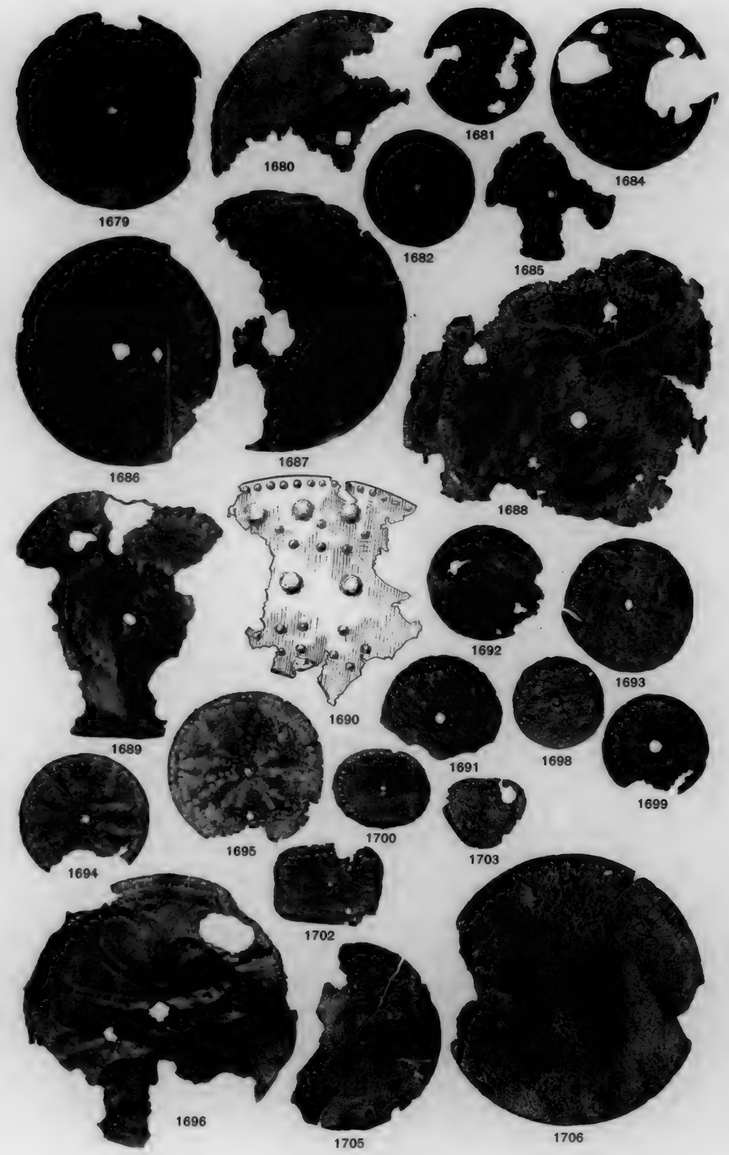
BRONZES.—DIADEMS, ETC. DISCS



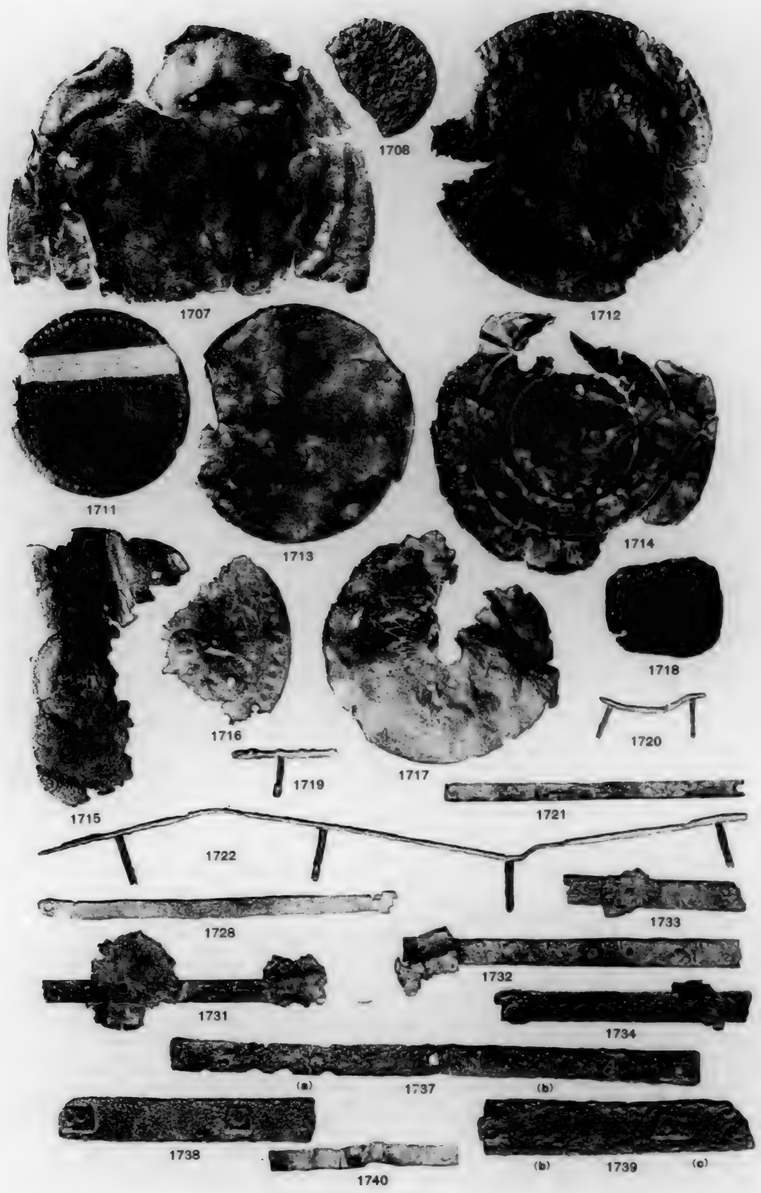
BRONZES.—DISCS



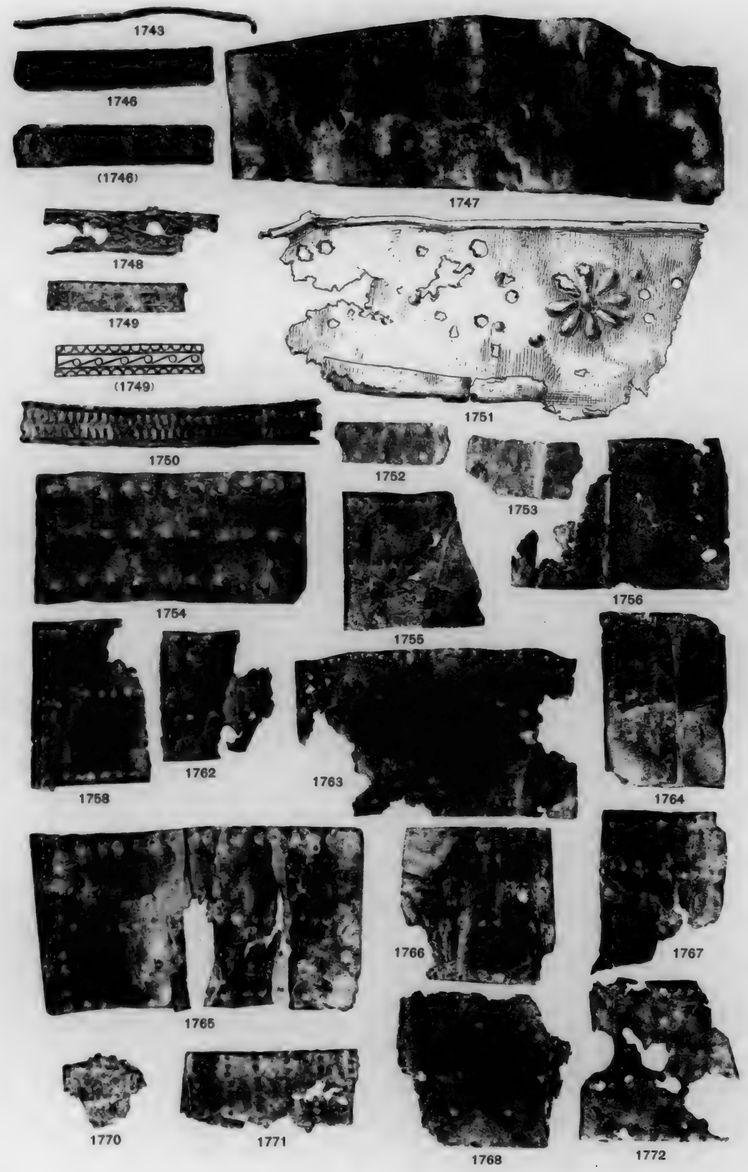
BRONZES.—DIADEMS, ETC. DISCS



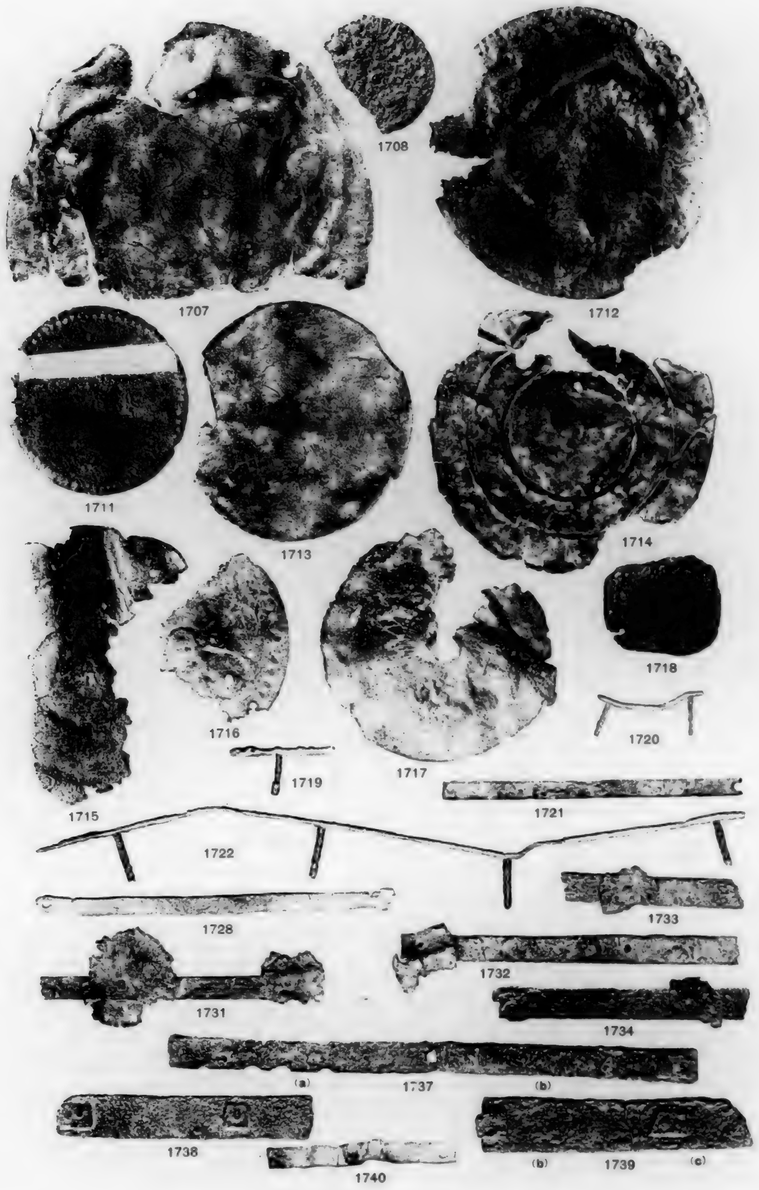
BRONZES.—DISCS



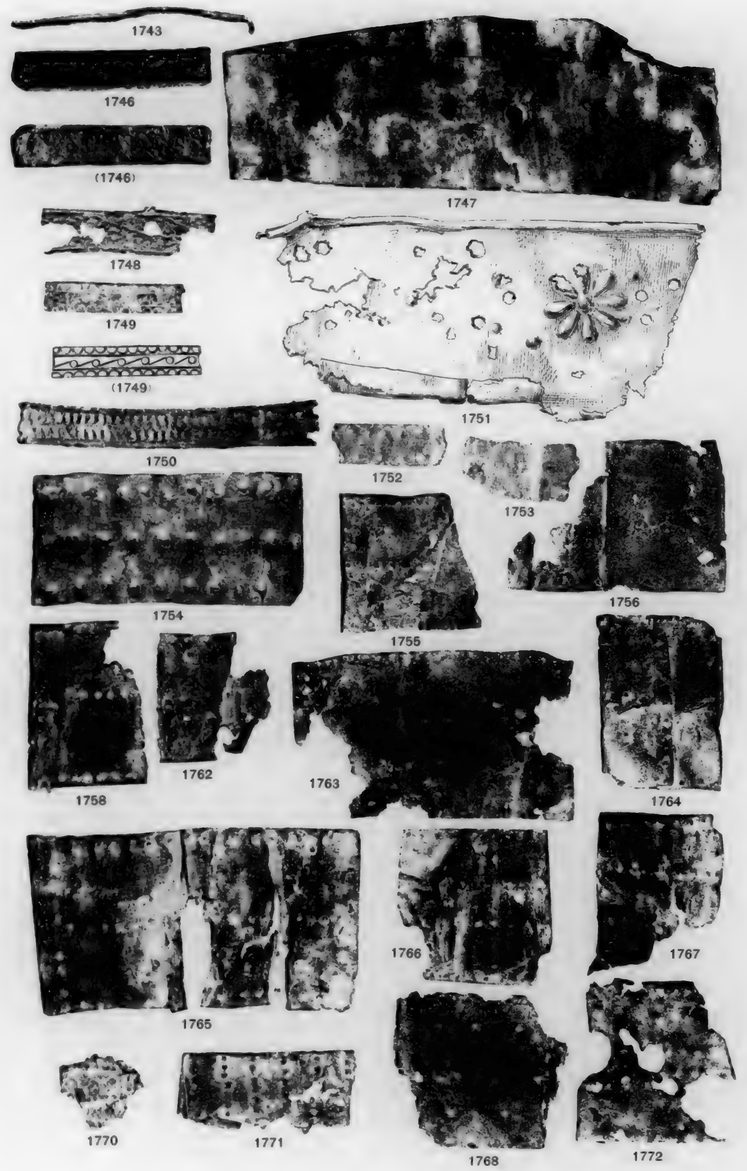
BRONZES.—DISCS, BINDING-STRIPS



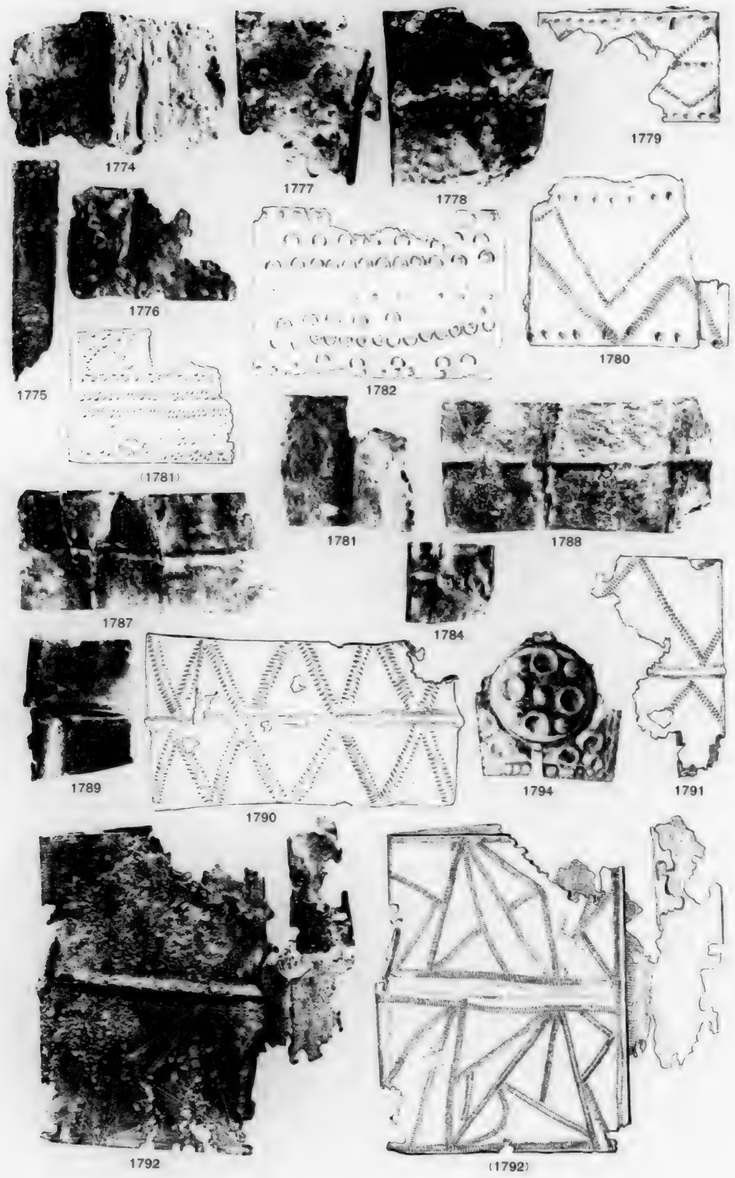
BRONZES.—BINDING-STRIPS, ORNAMENTED BANDS, COATINGS



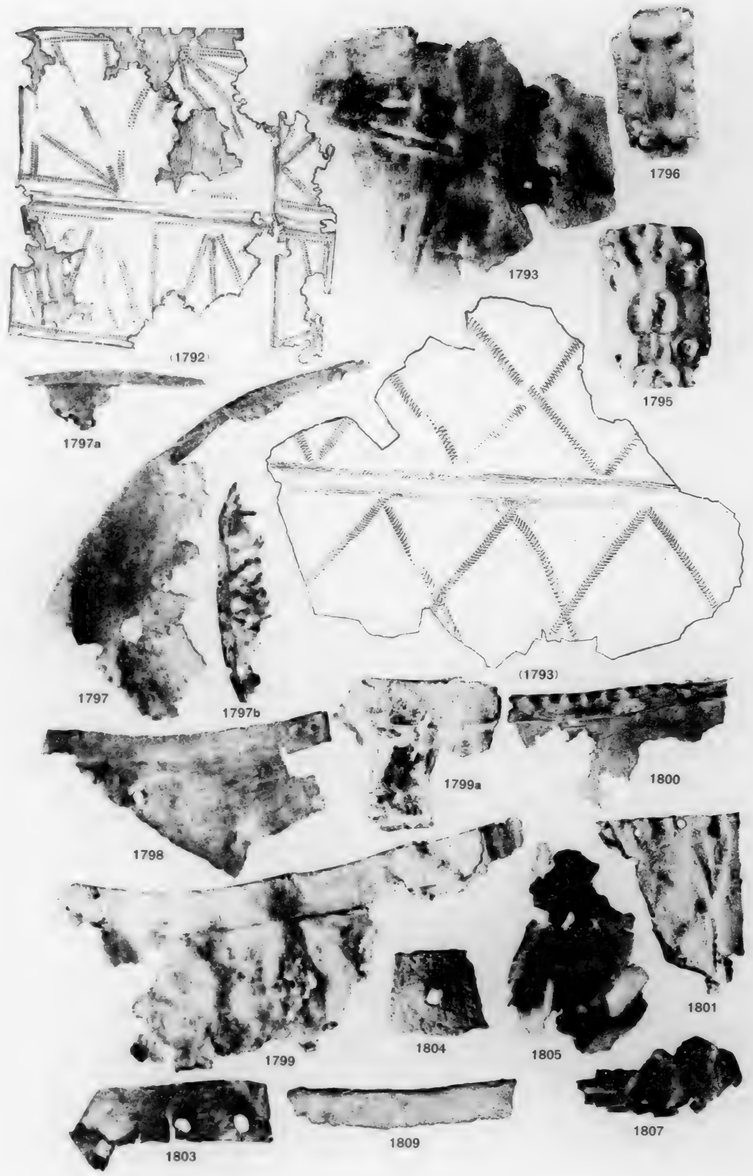
BRONZES.—DISCS, BINDING-STRIPS



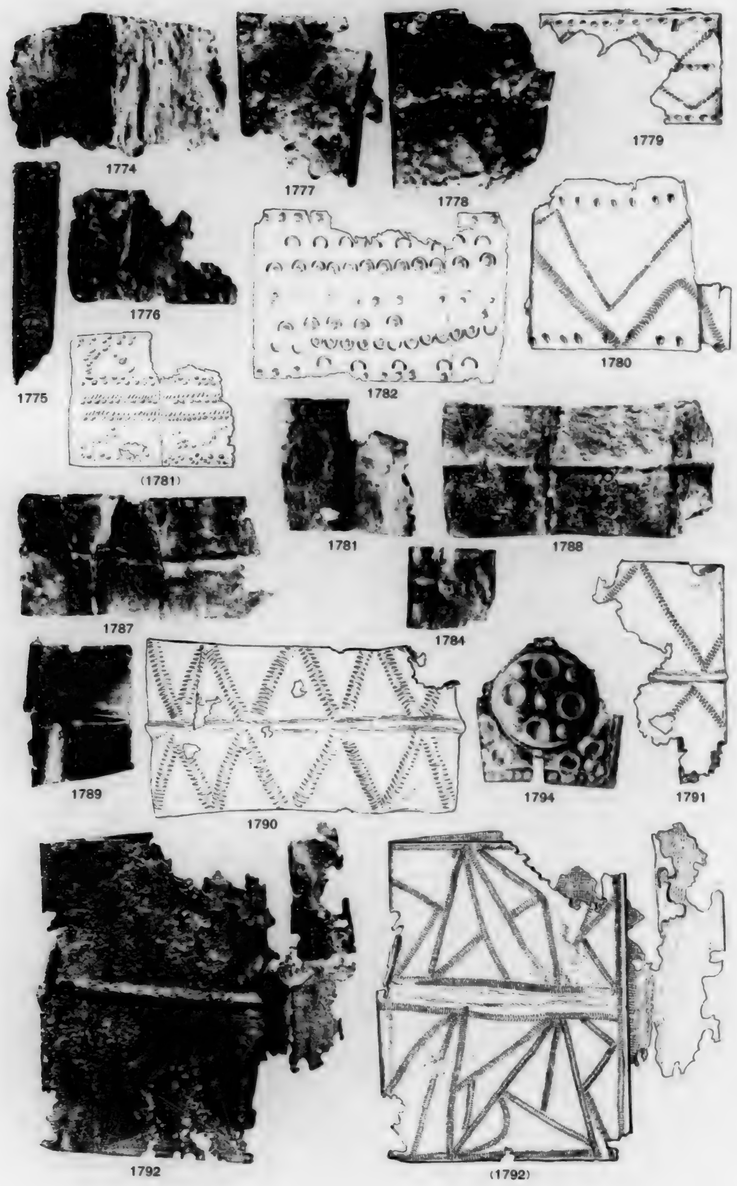
BRONZES.—BINDING-STRIPS, ORNAMENTED BANDS, COATINGS



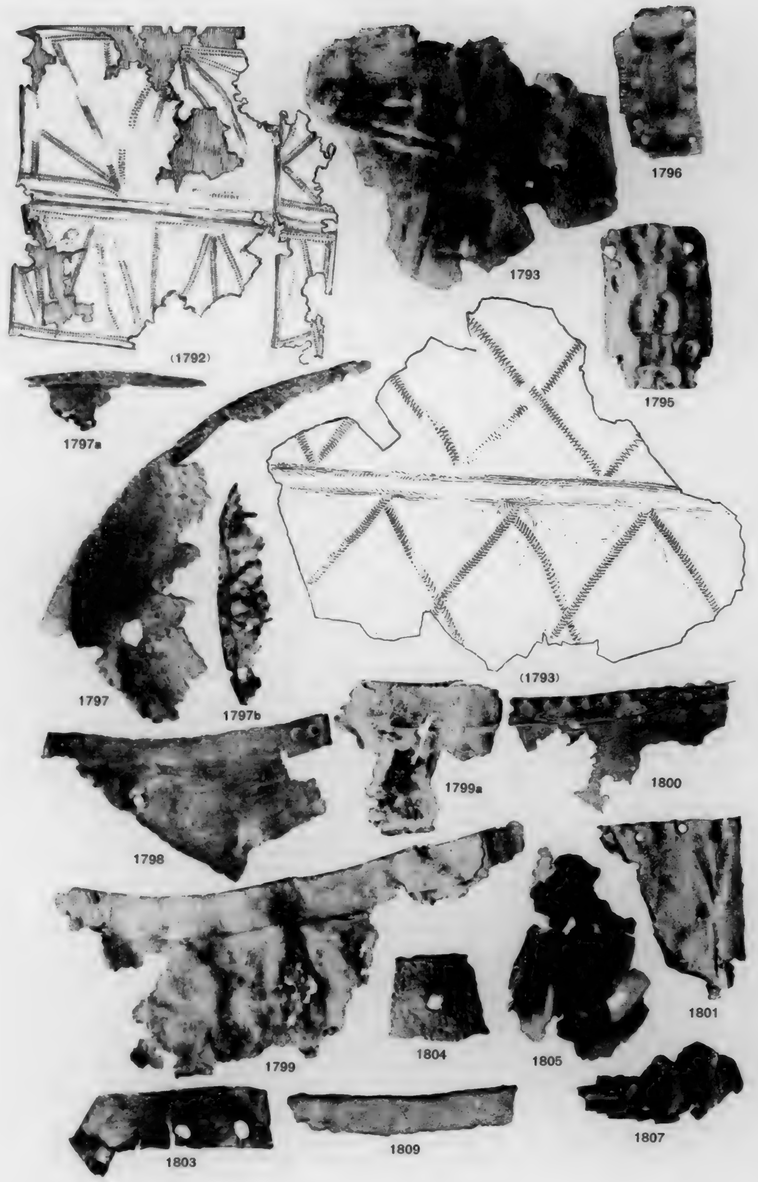
BRONZES.—COATINGS



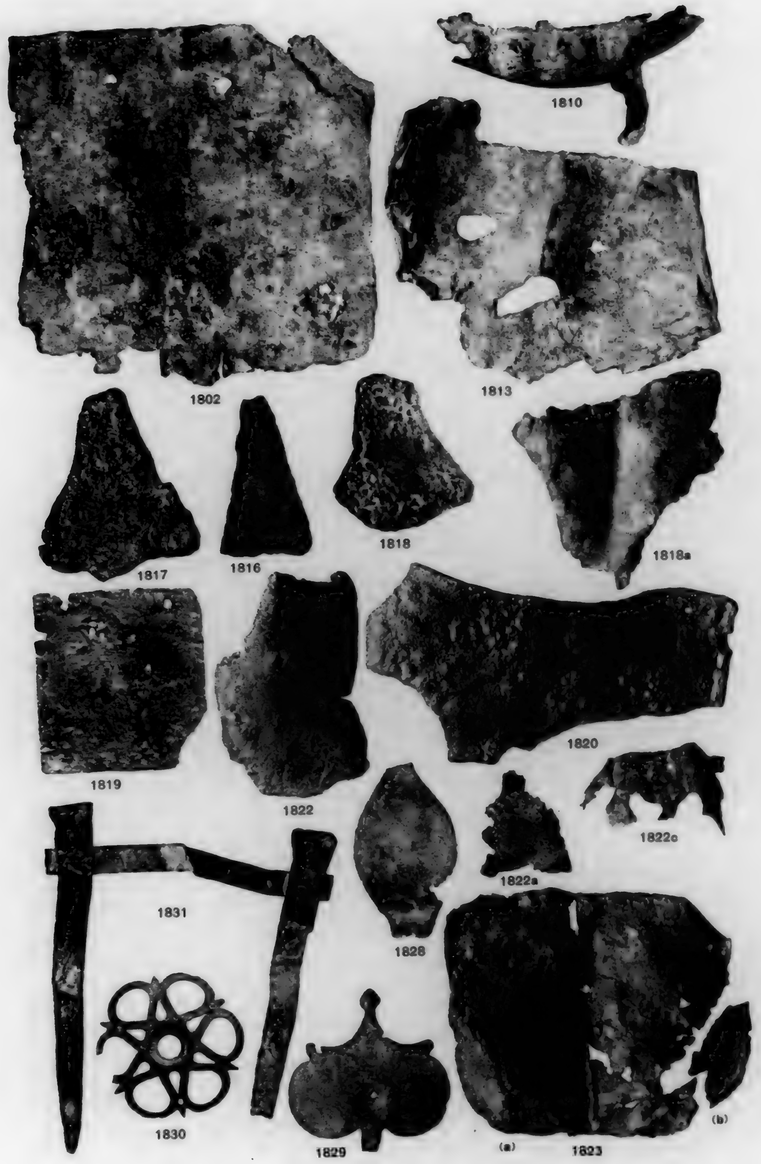
BRONZES.—COATINGS, RIMS, PLATE



BRONZES.—COATINGS



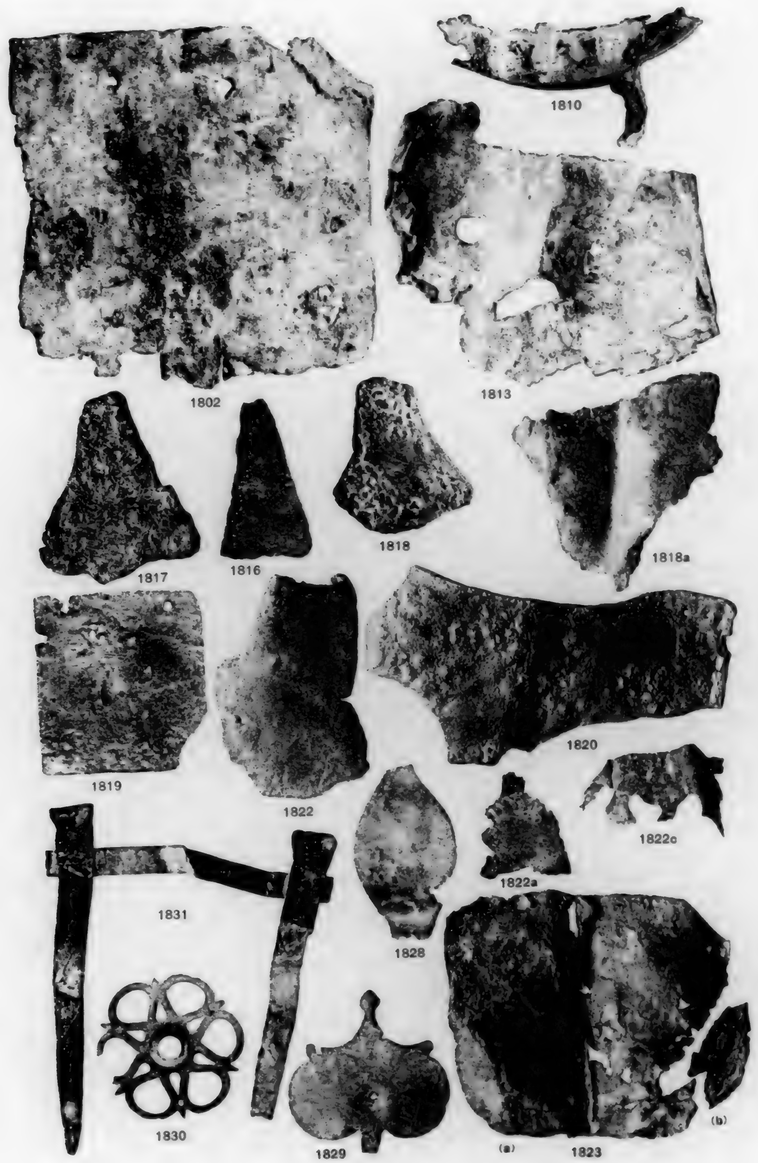
BRONZES.—COATINGS, RIMS, PLATE



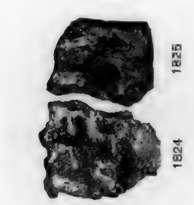
BRONZES.—PLATE, CUT ORNAMENTS

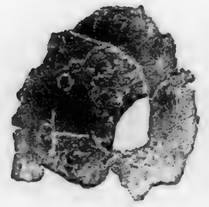


BRONZES.—PLATE WITH INSCRIPTION



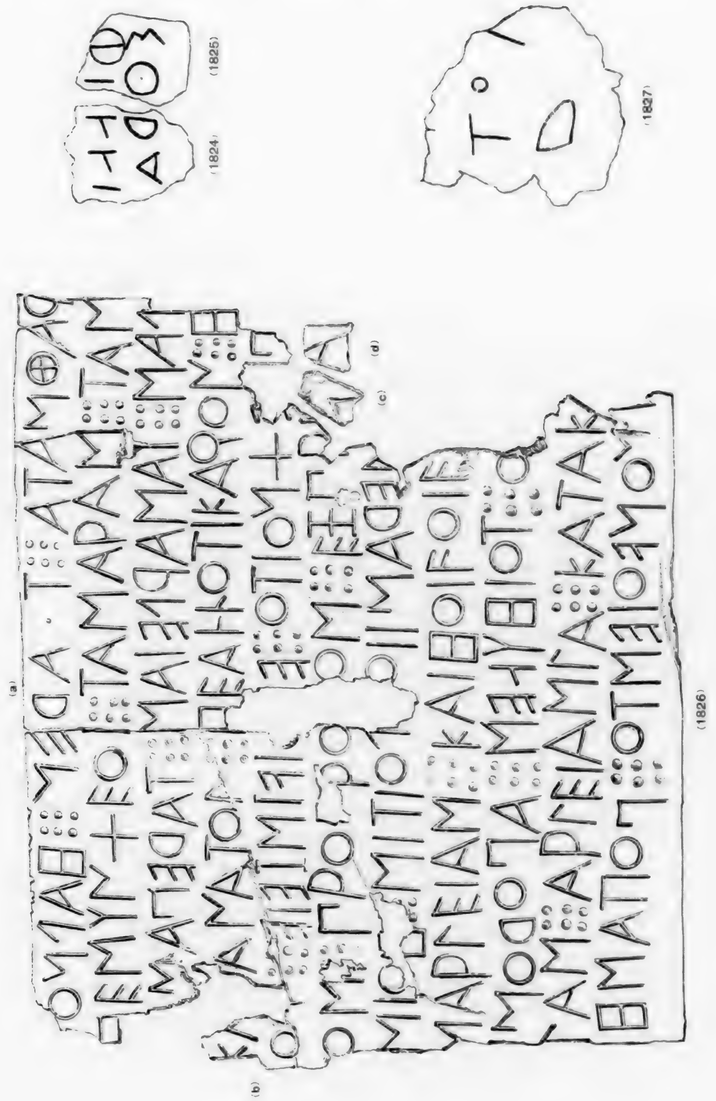
BRONZES.—PLATE. CUT ORNAMENTS



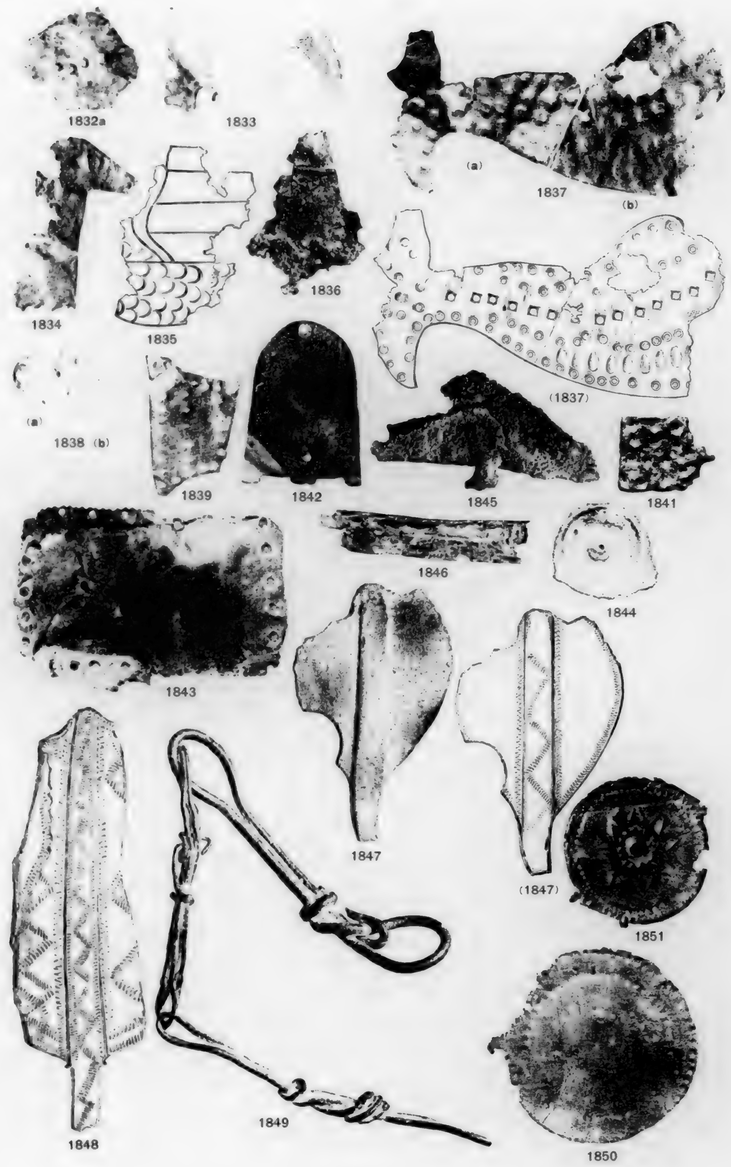




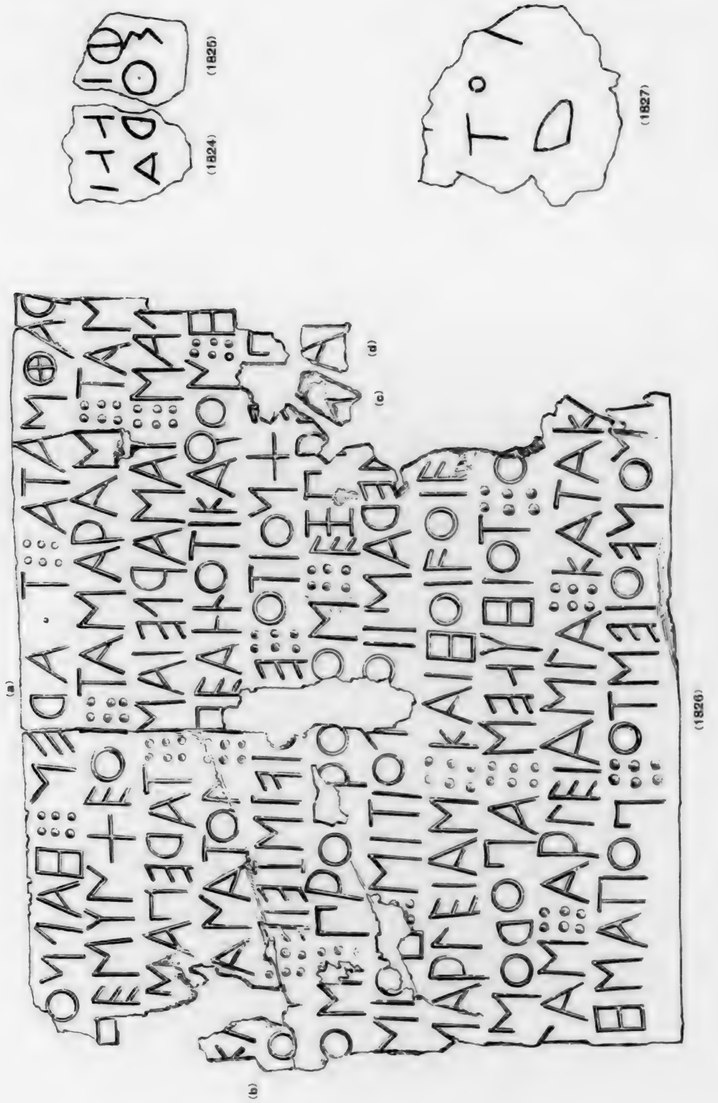
BRONZES.—PLATE WITH INSCRIPTION



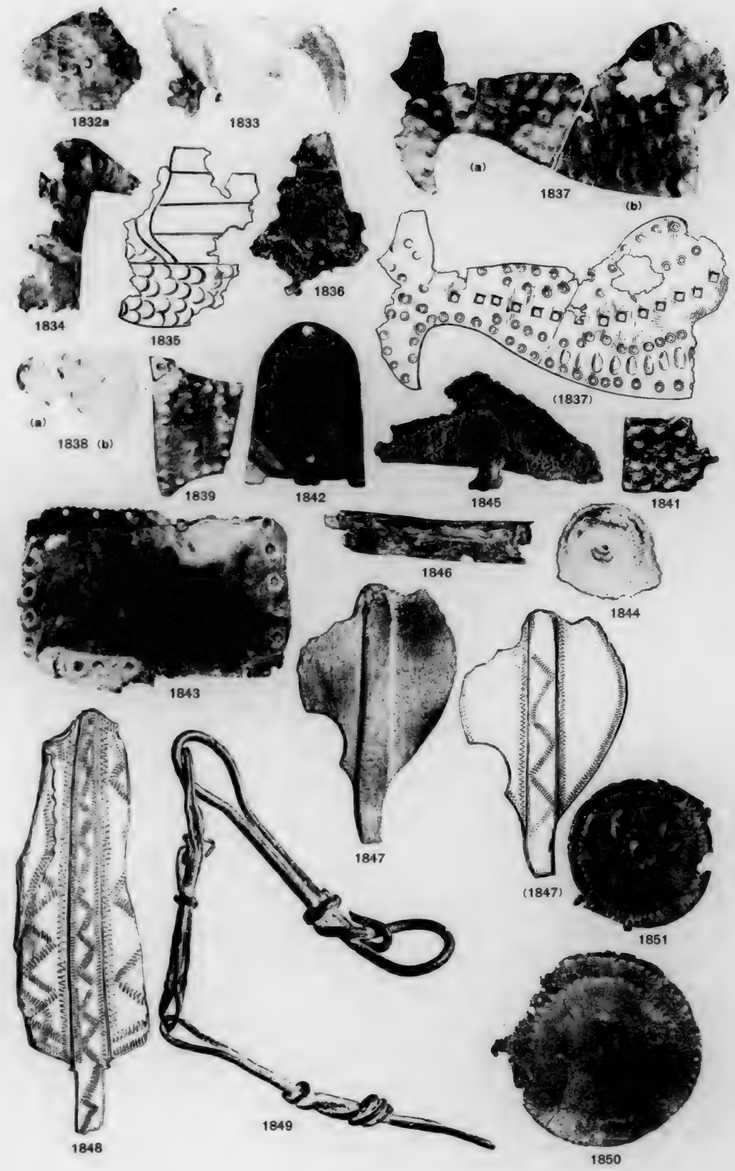
BRONZES.—PLATE WITH INSCRIPTION



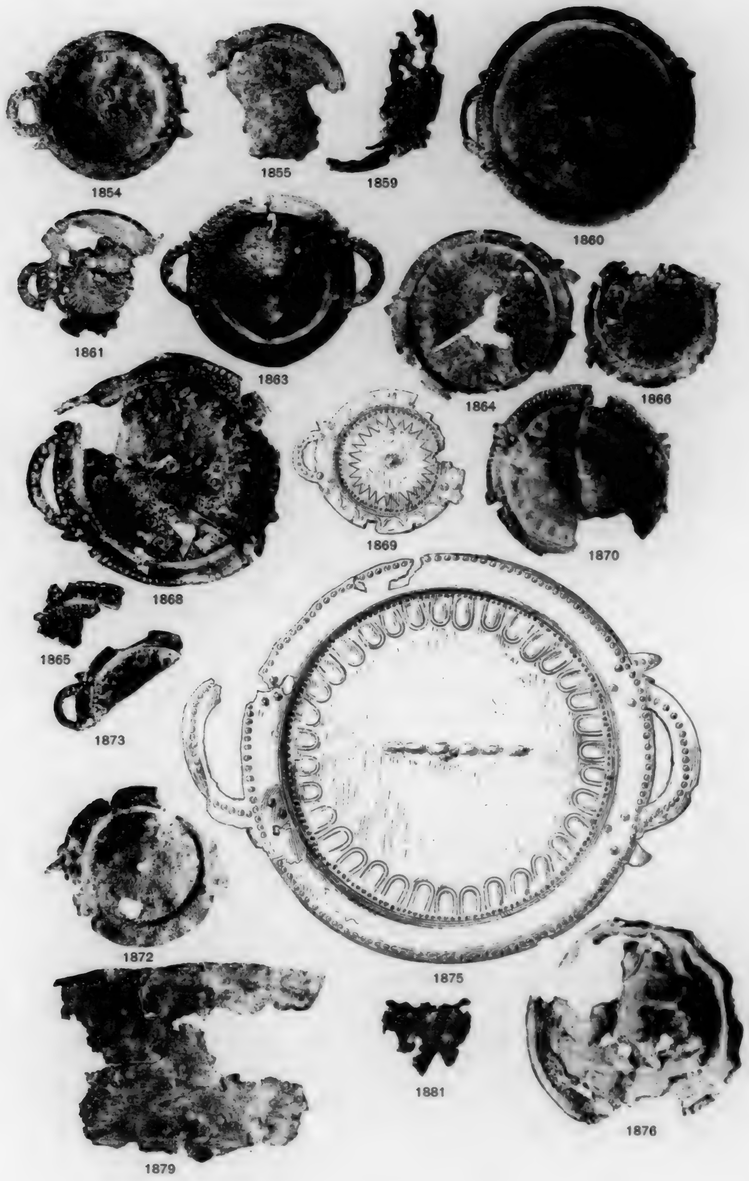
BRONZES.—FIGURES, ETC. LEAVES, THONG, PLATES



BRONZES.—PLATE WITH INSCRIPTION

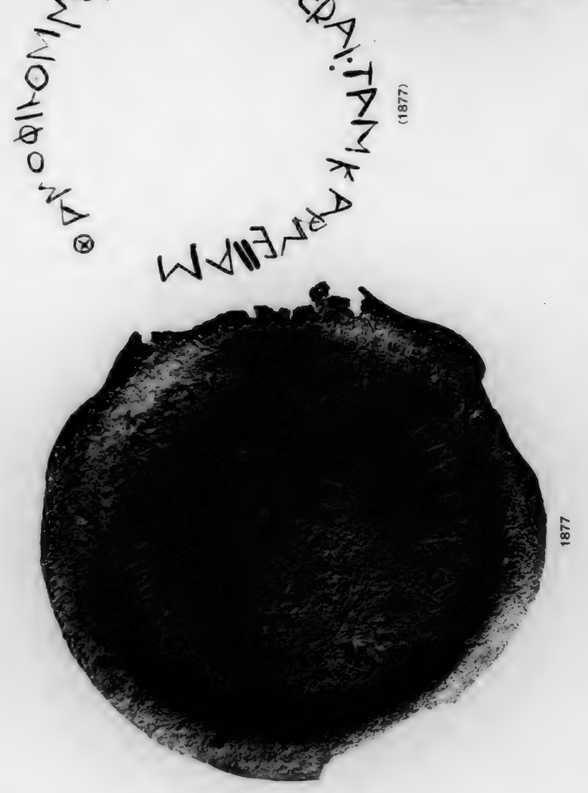


BRONZES.—FIGURES, ETC. LEAVES, THONG, PLATES

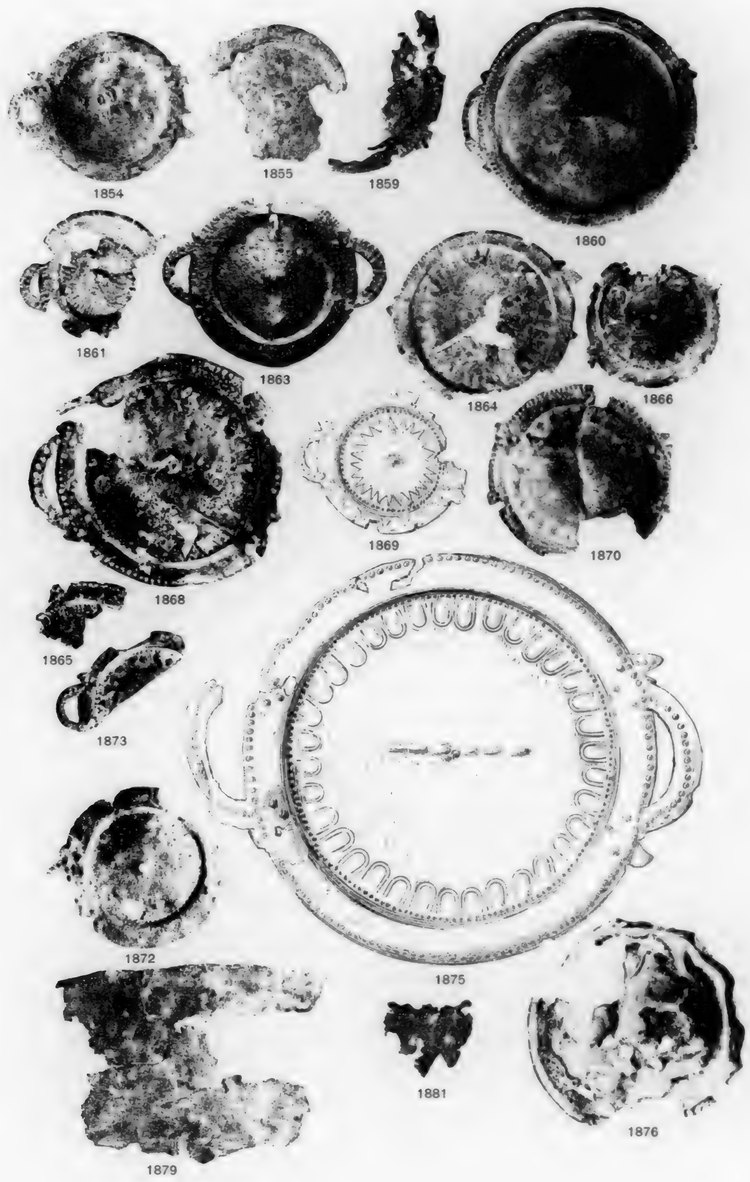


BRONZES.—PLATES, PLATTERS

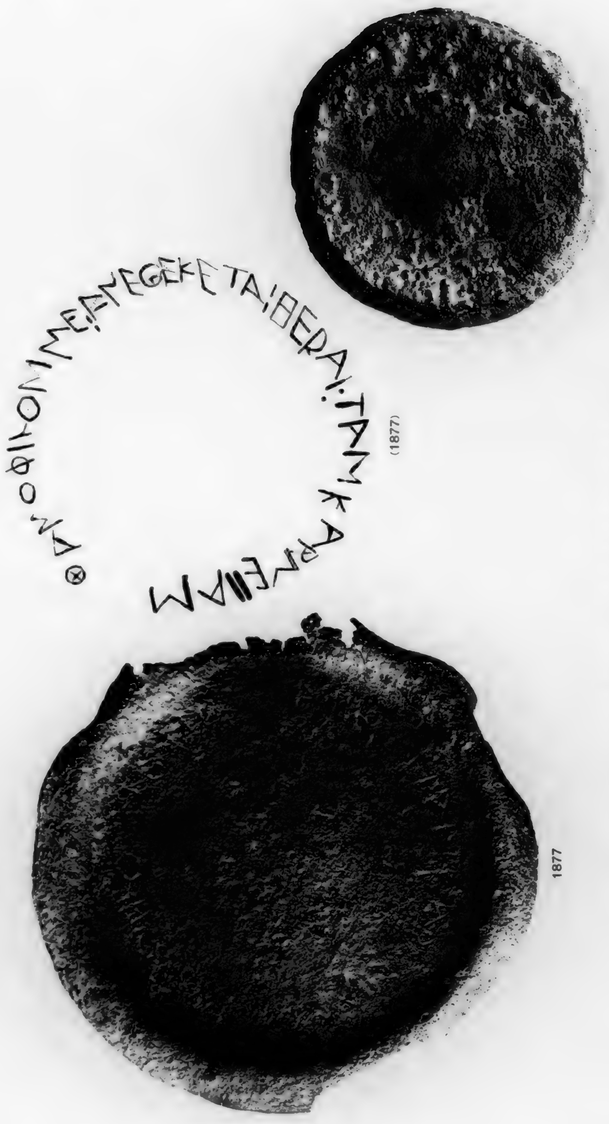




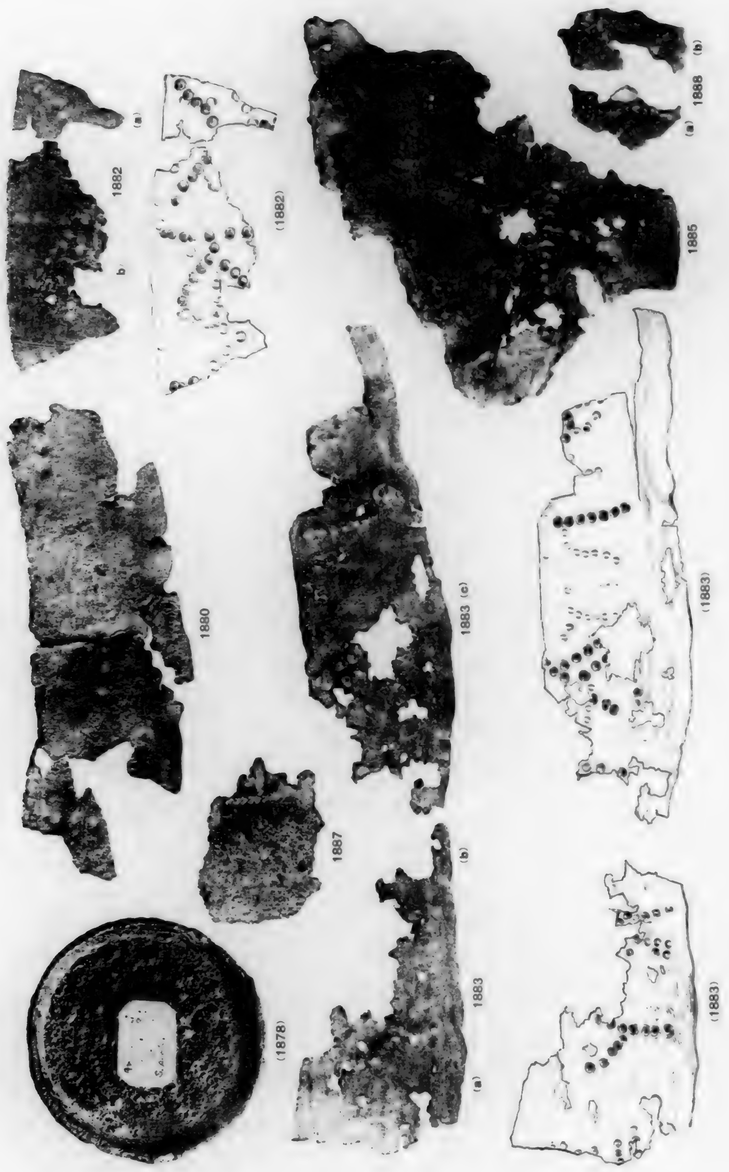
BRONZES.—PLATES



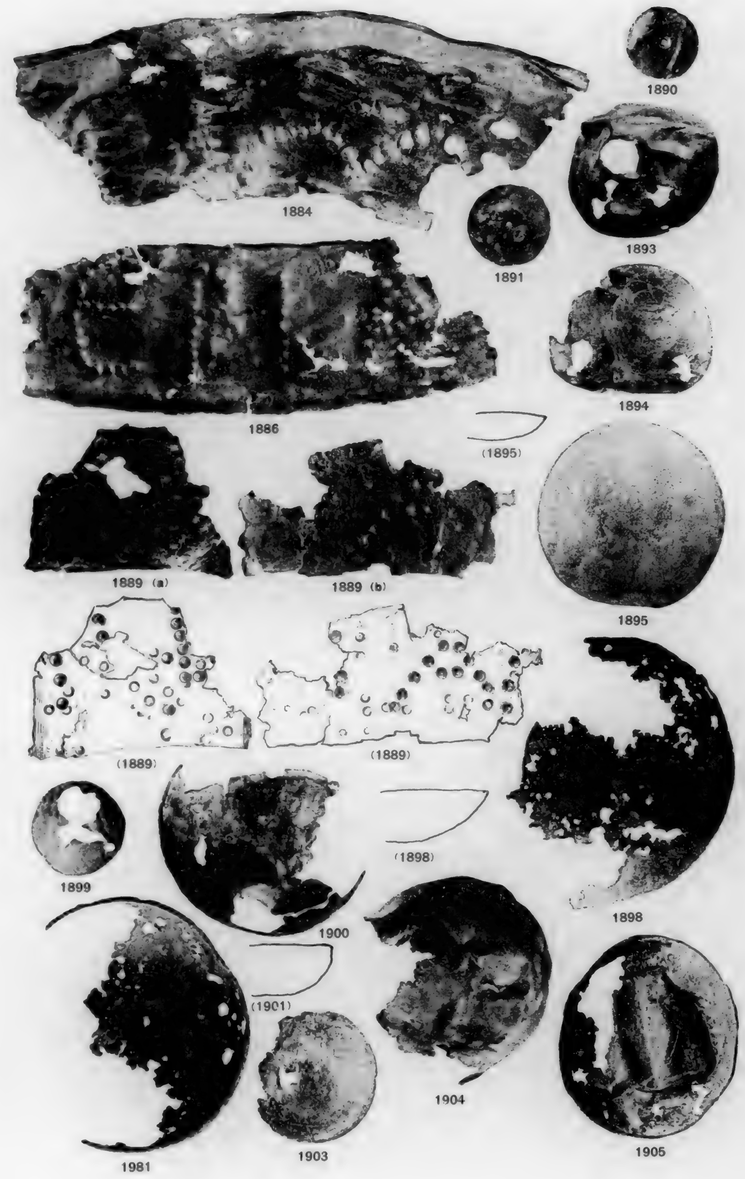
BRONZES.—PLATES, PLATTERS



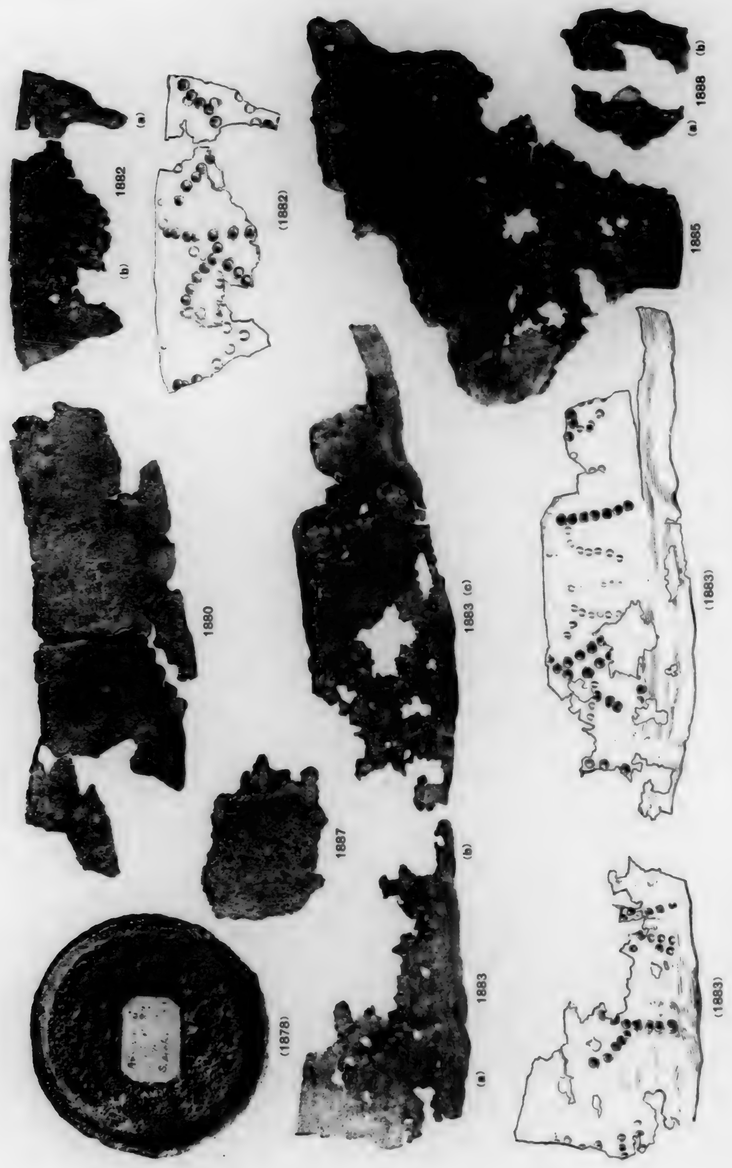
BRONZES.—PLATES



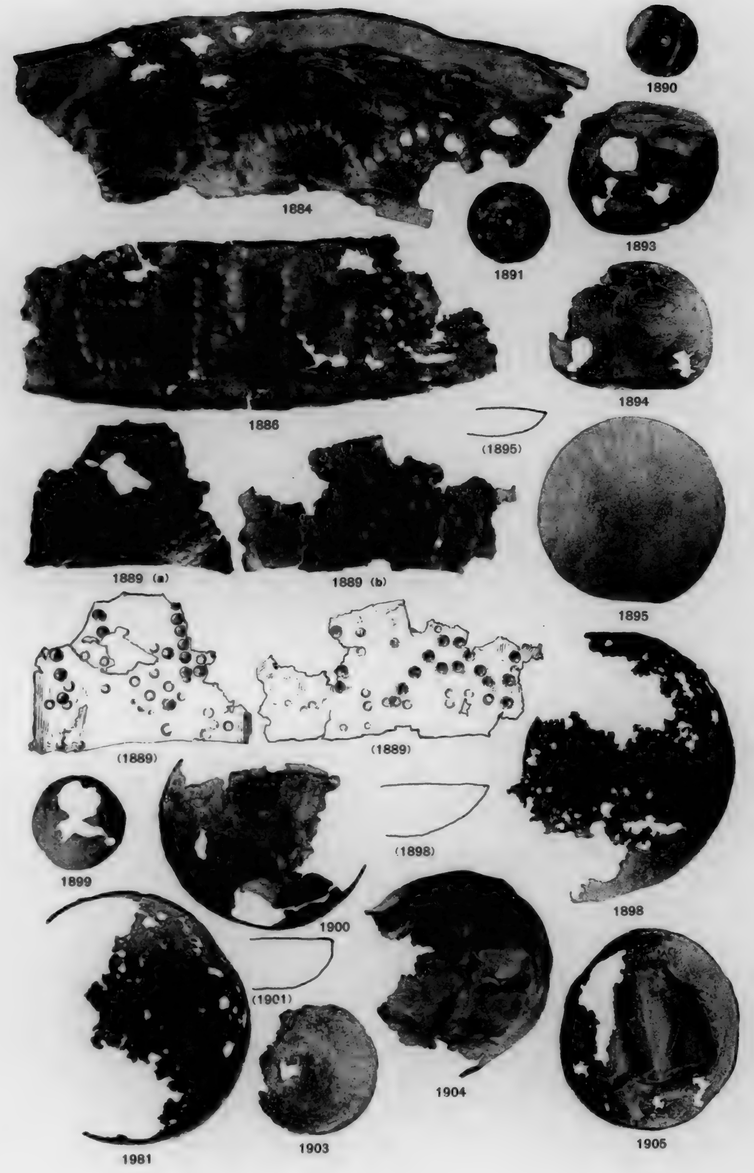
BRONZES.—PLATES, PLATTERS



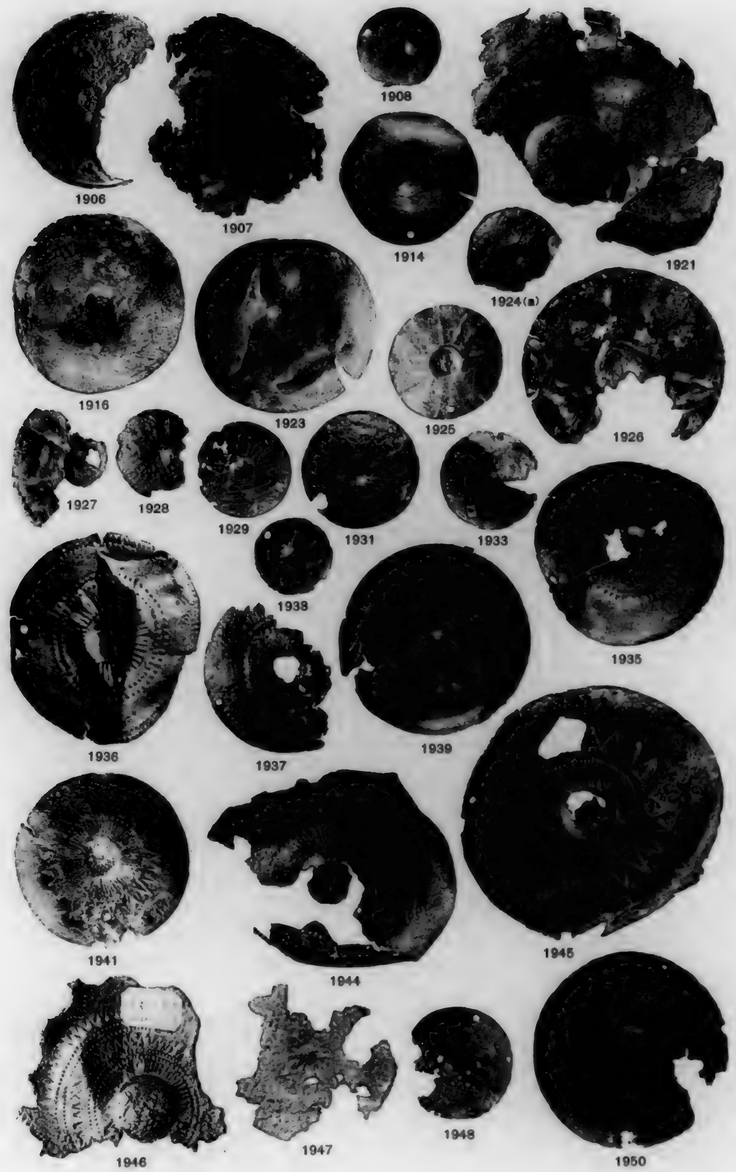
BRONZES.—PLATTERS, SAUCERS



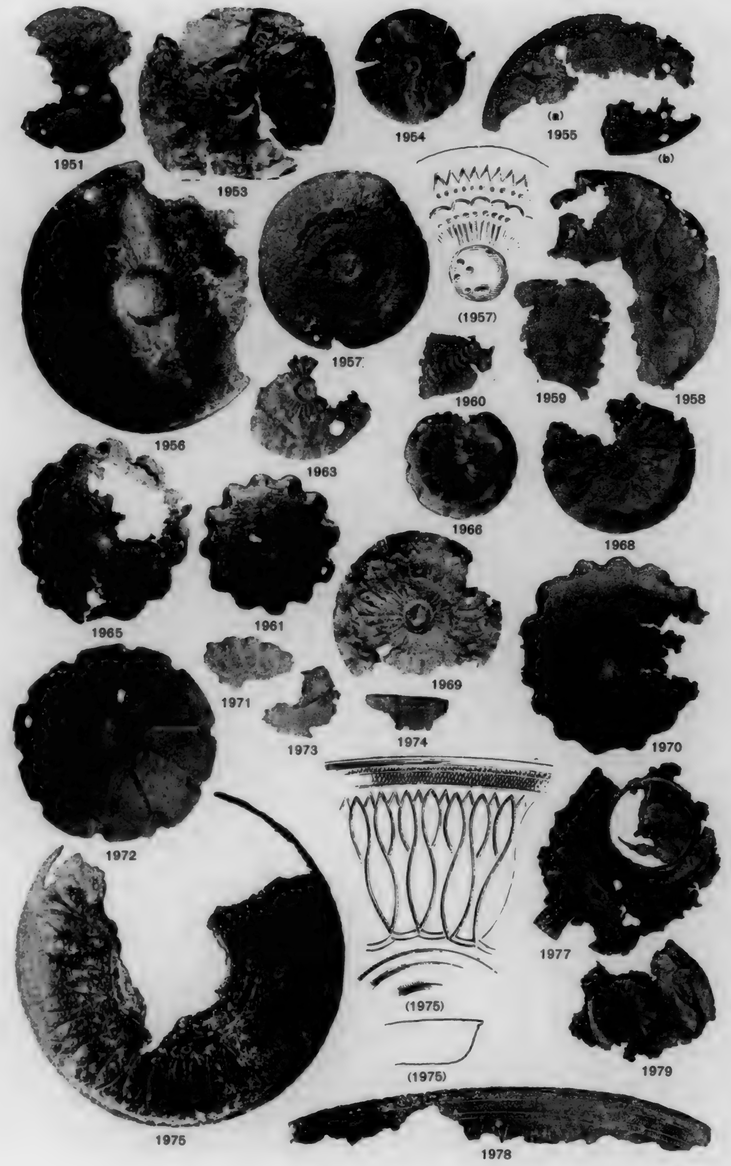
BRONZES.—PLATES, PLATTERS



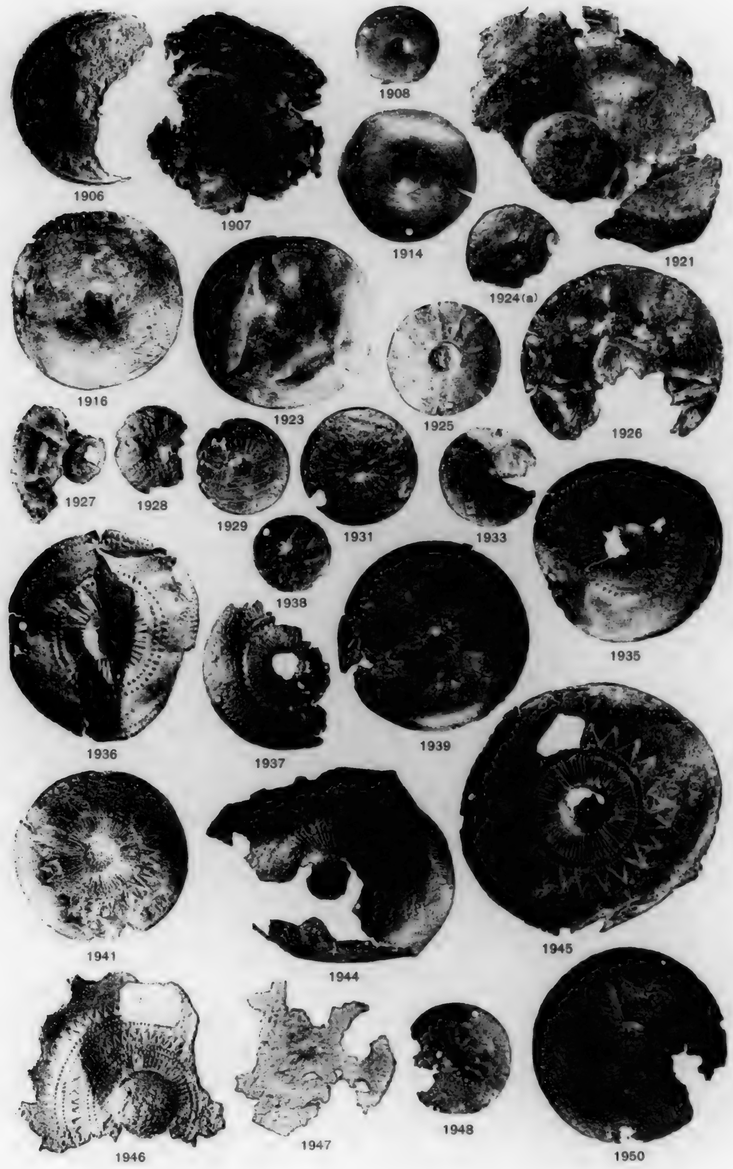
BRONZES.—PLATTERS, SAUCERS



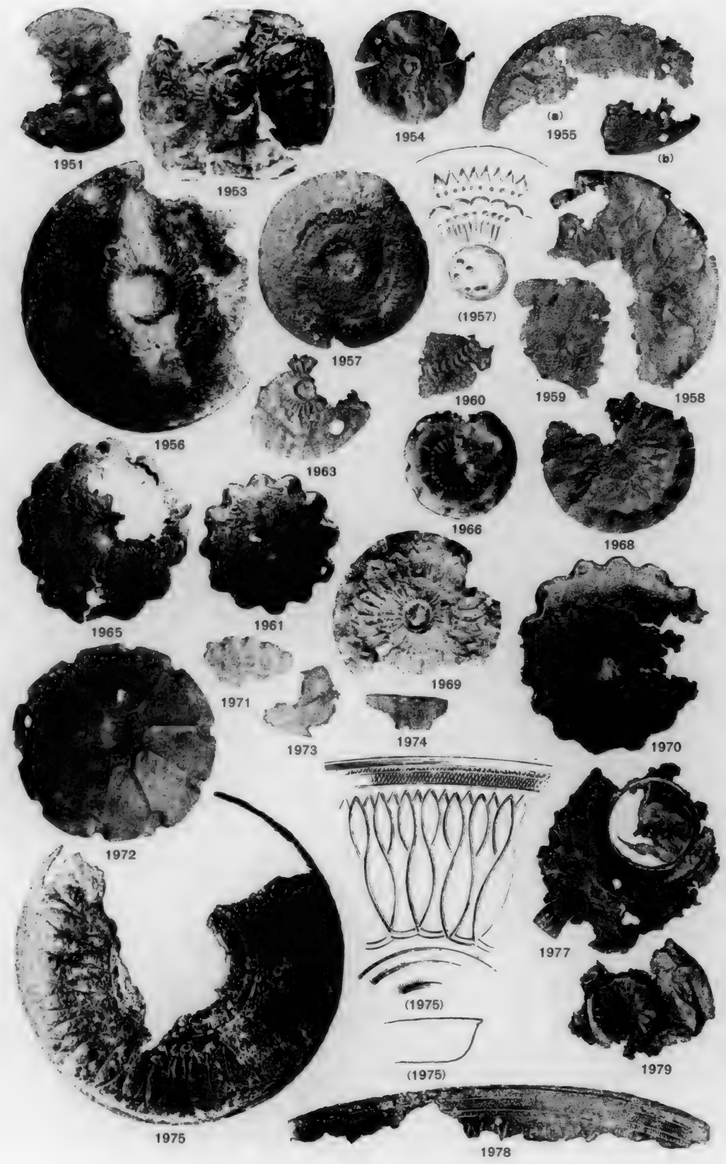
BRONZES.—SAUCERS



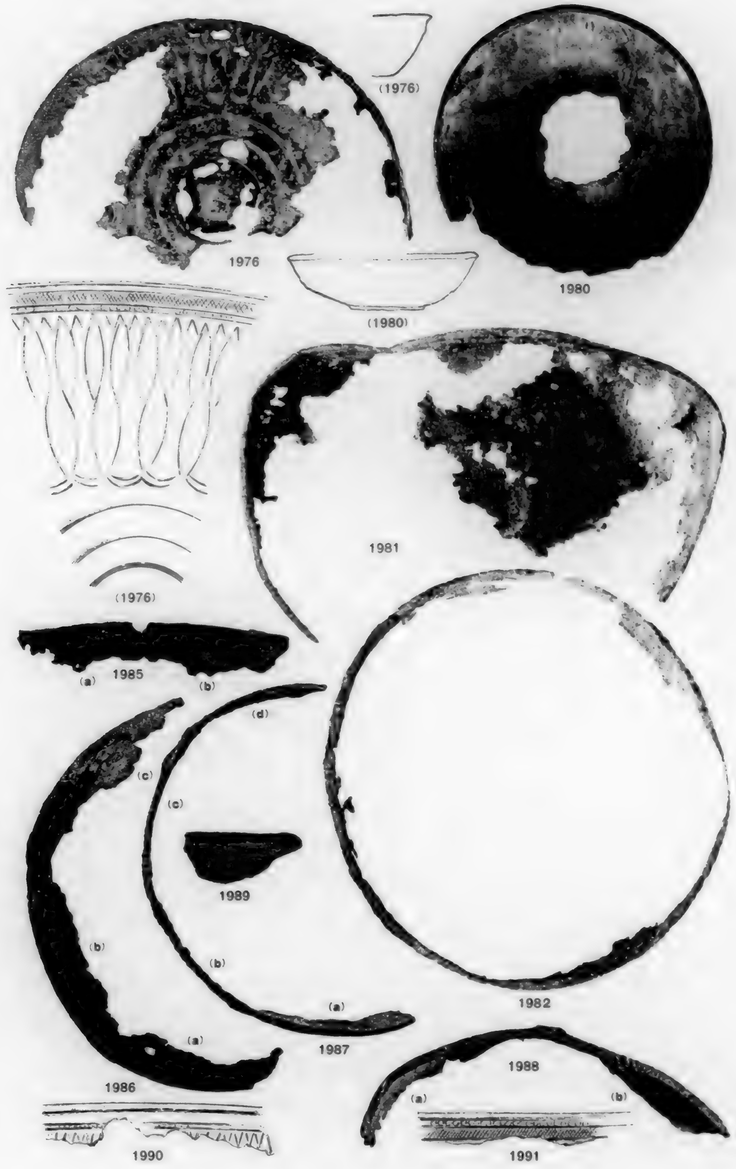
BRONZES.—SAUCERS



BRONZES.—SAUCERS



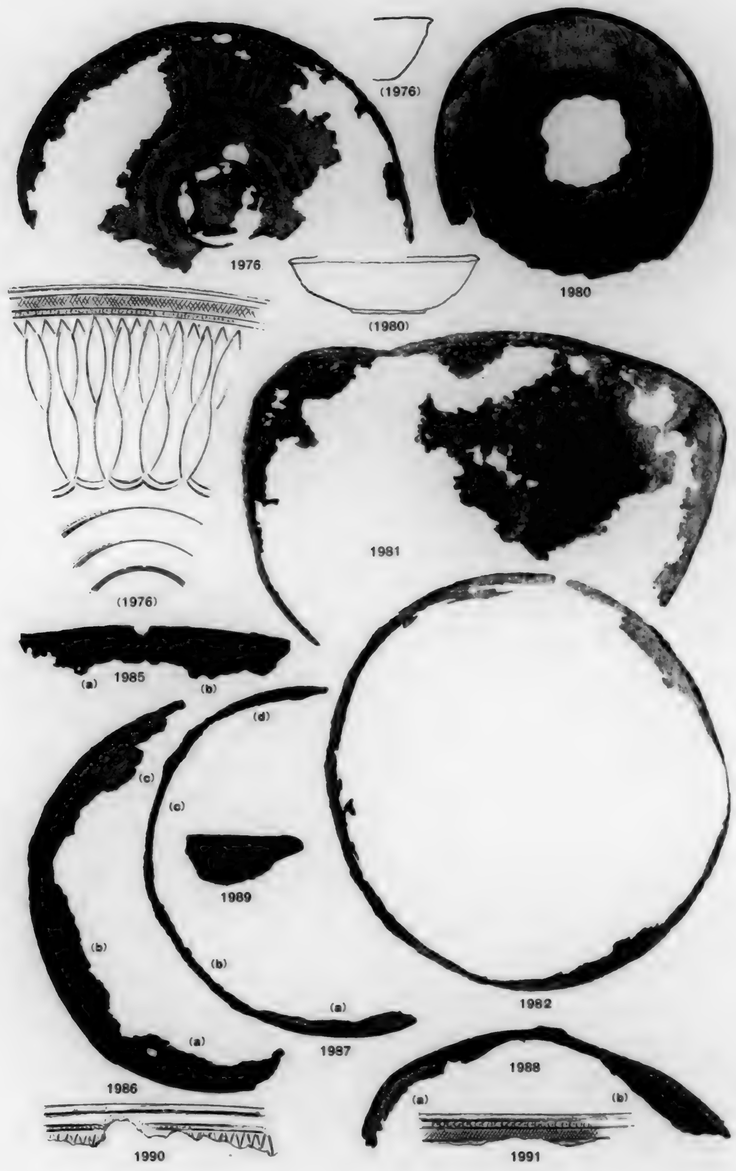
BRONZES.—SAUCERS



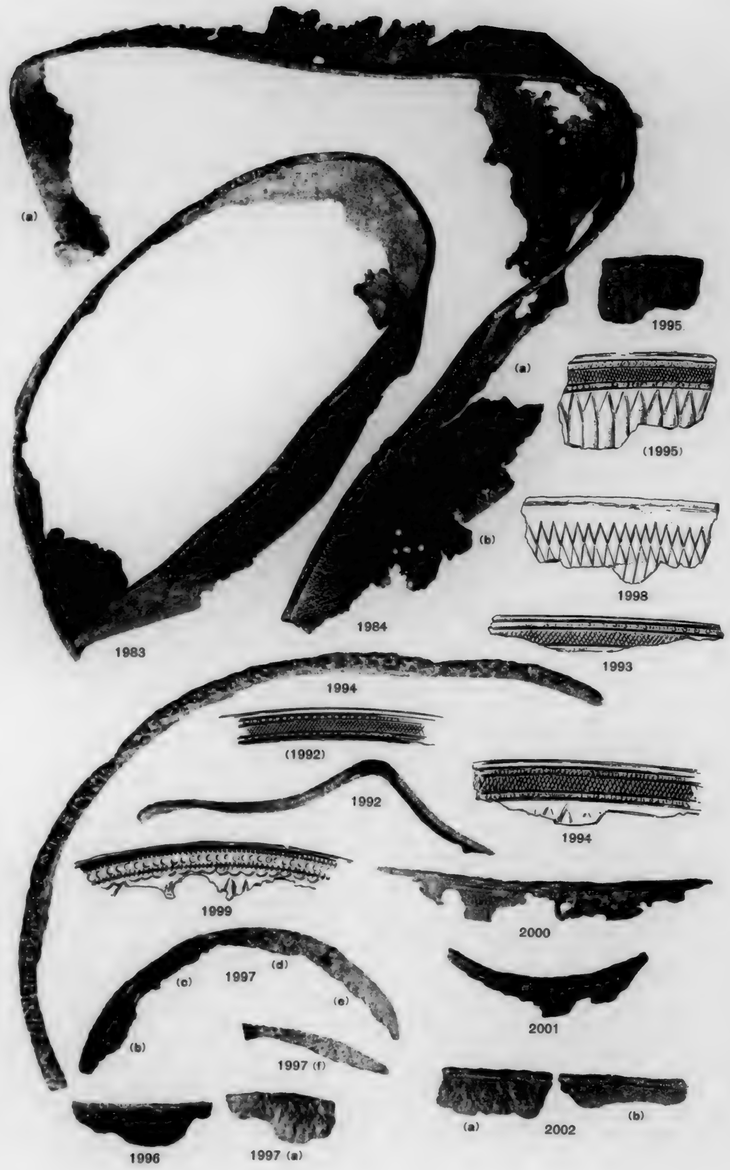
BRONZES.—SAUCERS, BOWLS



BRONZES.—BOWLS



BRONZES.—SAUCERS, BOWLS



BRONZES.—BOWLS



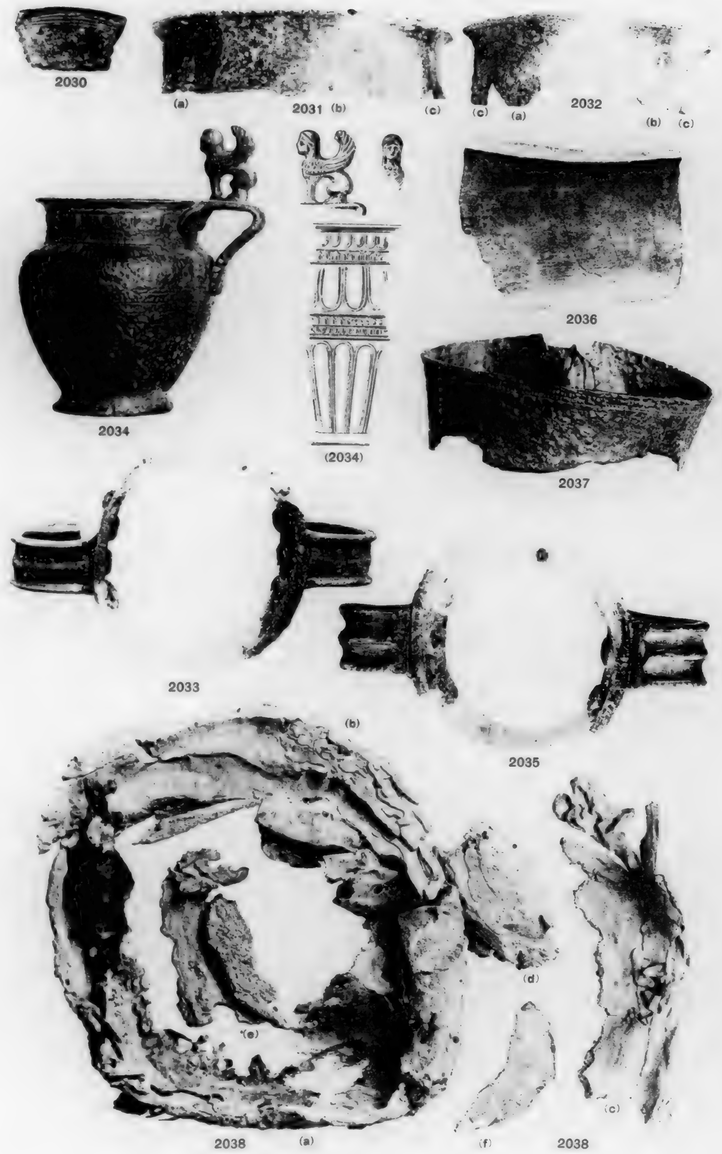
BRONZES.—BOWLS SUSPENSION VASE, ETC. PITCHER, JARS



BRONZES.—JARS, BASIN



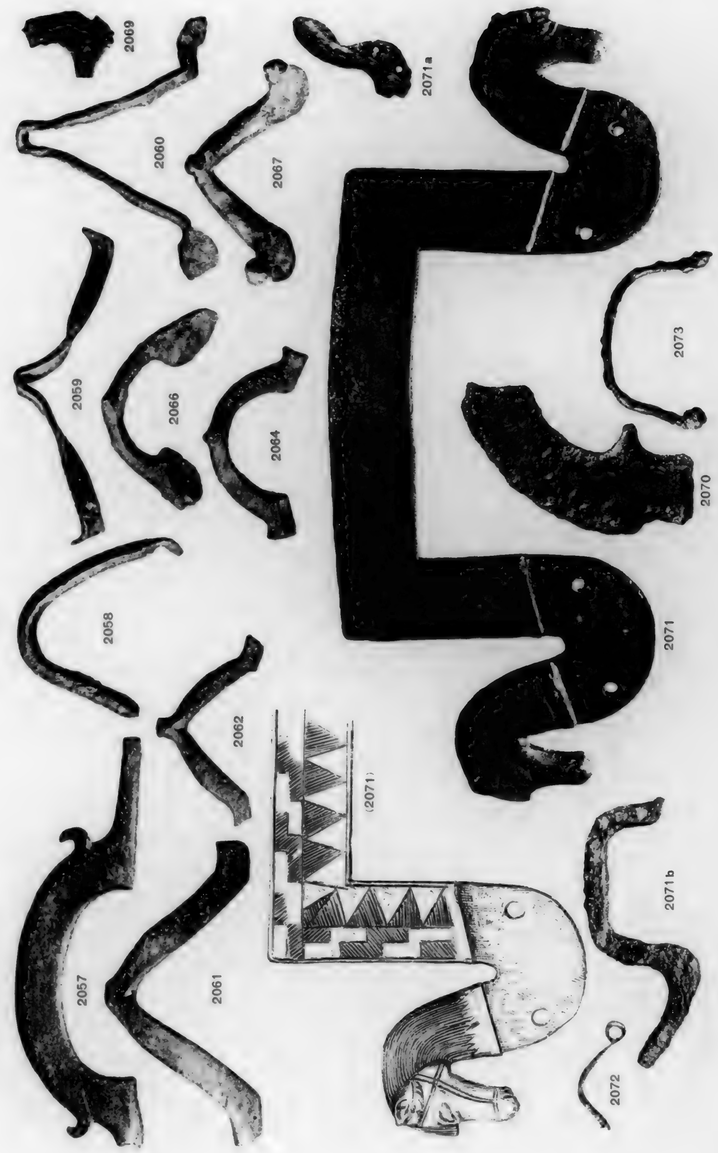
BRONZES.—BOWLS SUSPENSION VASE, ETC. PITCHER, JARS



BRONZES.—JARS, BASIN



BRONZES.—CAULDRON, BOSSES, HORIZONTAL HANDLES



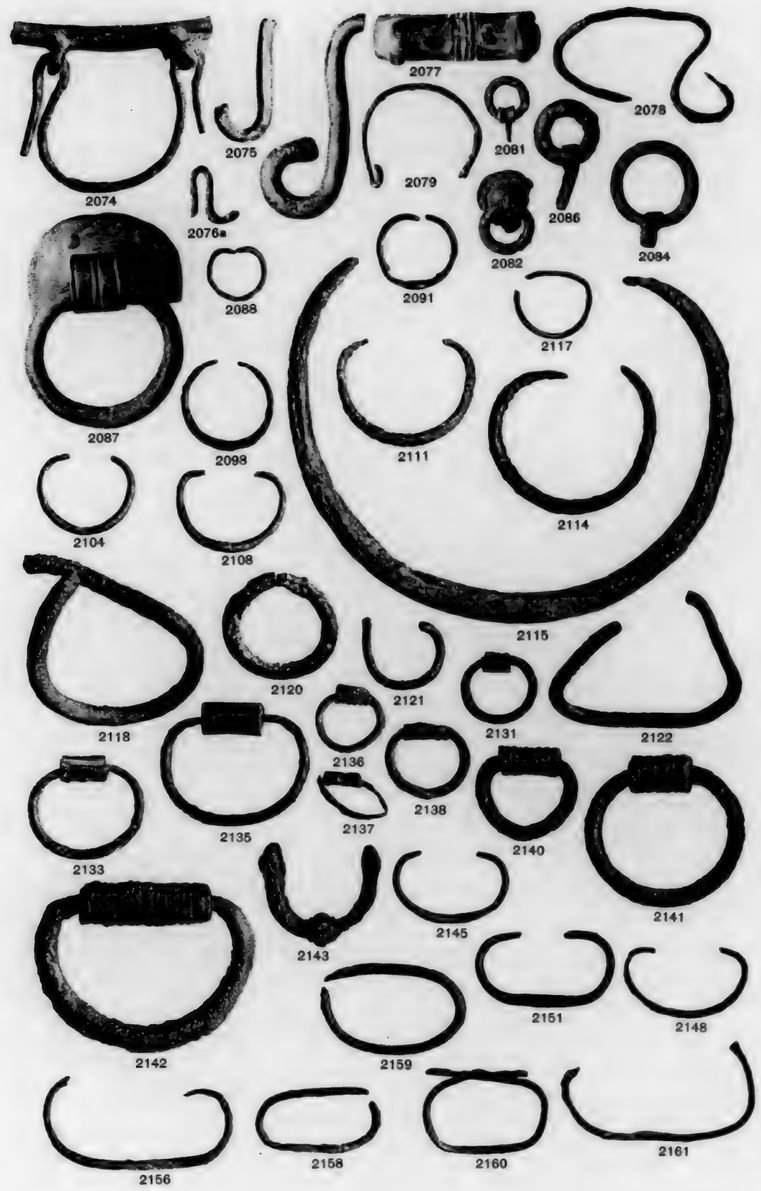
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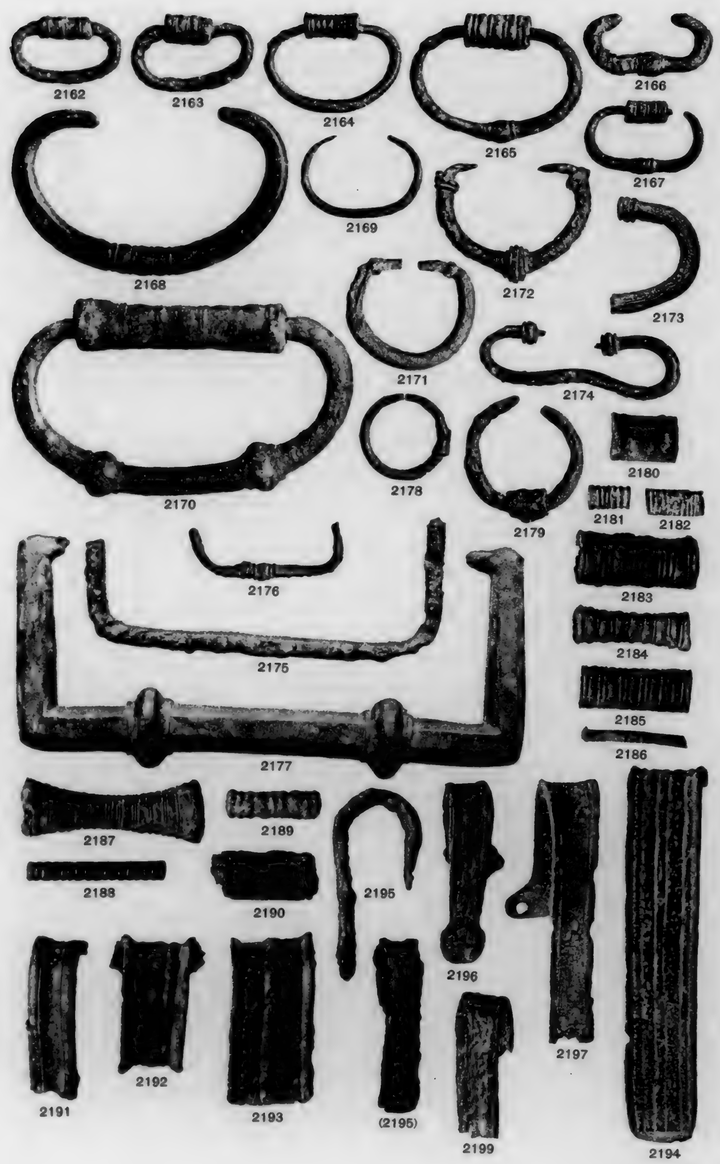
BRONZES.—CAULDRON, BOSSES, HORIZONTAL HANDLES



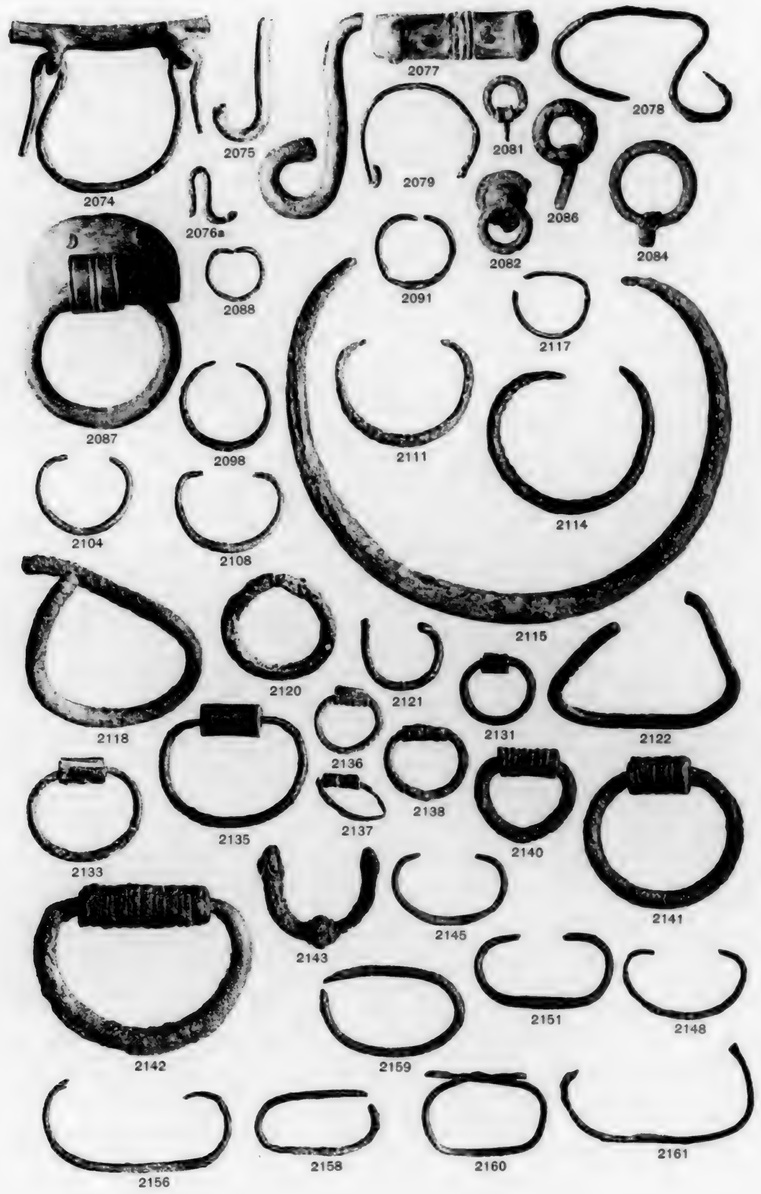
BRONZES.—HORIZONTAL HANDLES



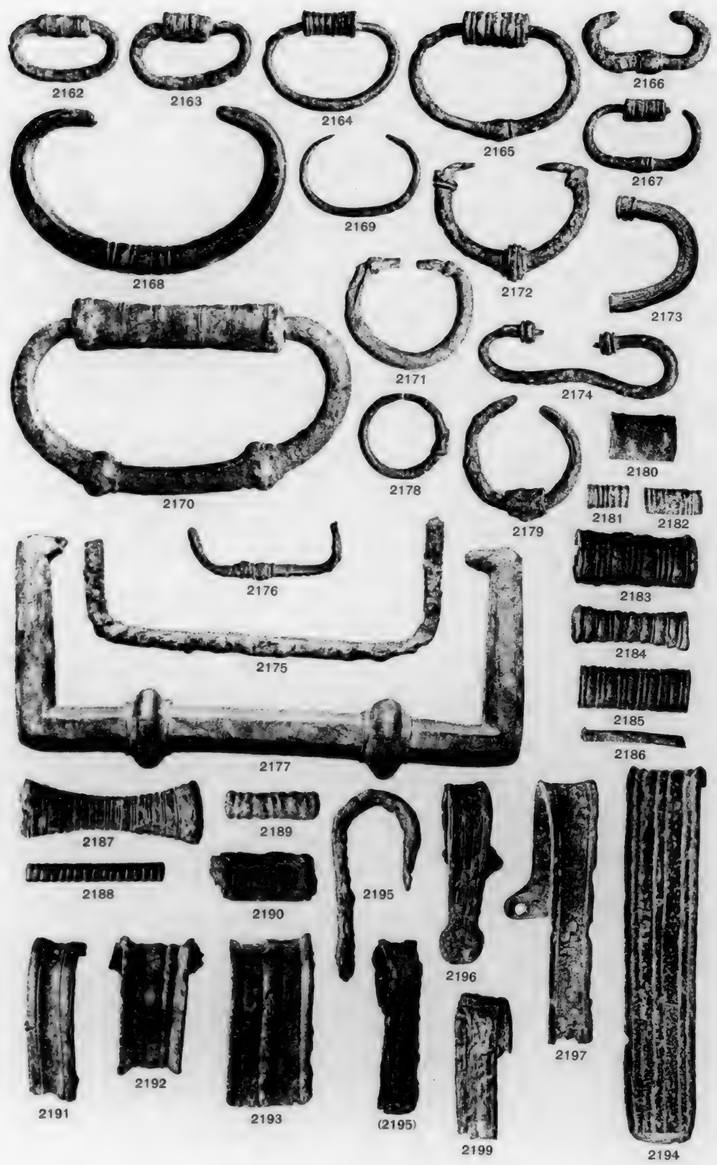
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BRONZES.—HORIZONTAL AND VERTICAL HANDLES



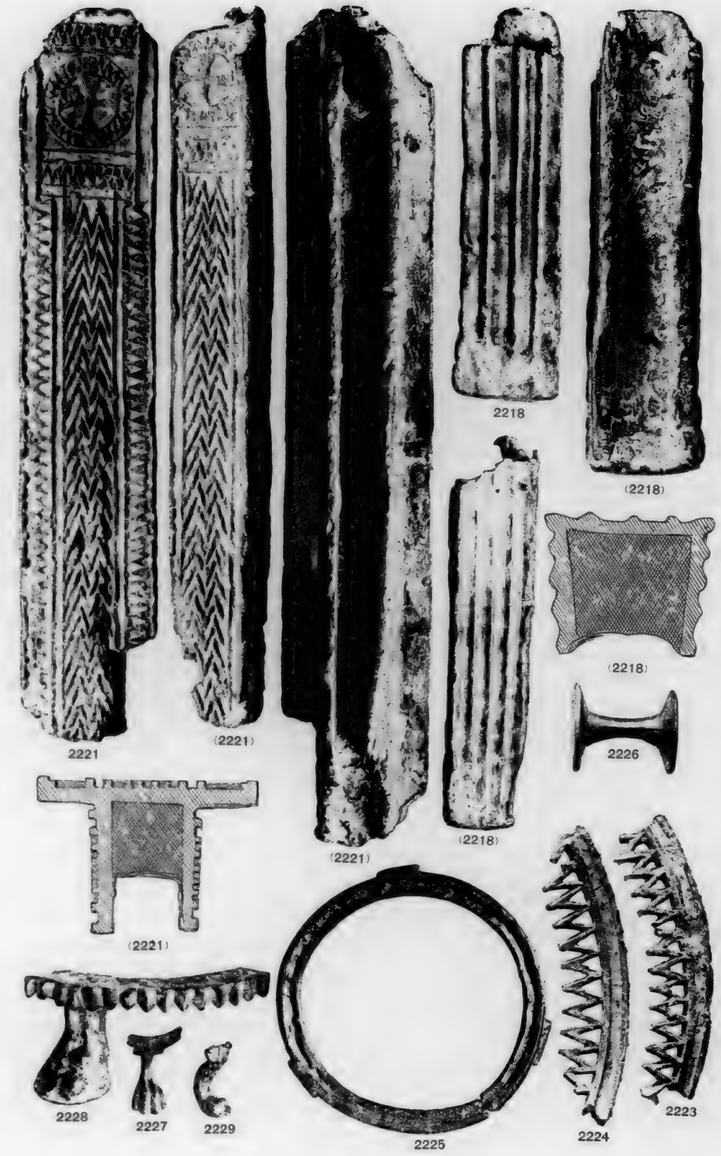
BRONZES.—HORIZONTAL HANDLES



BRONZES.—HORIZONTAL AND VERTICAL HANDLES



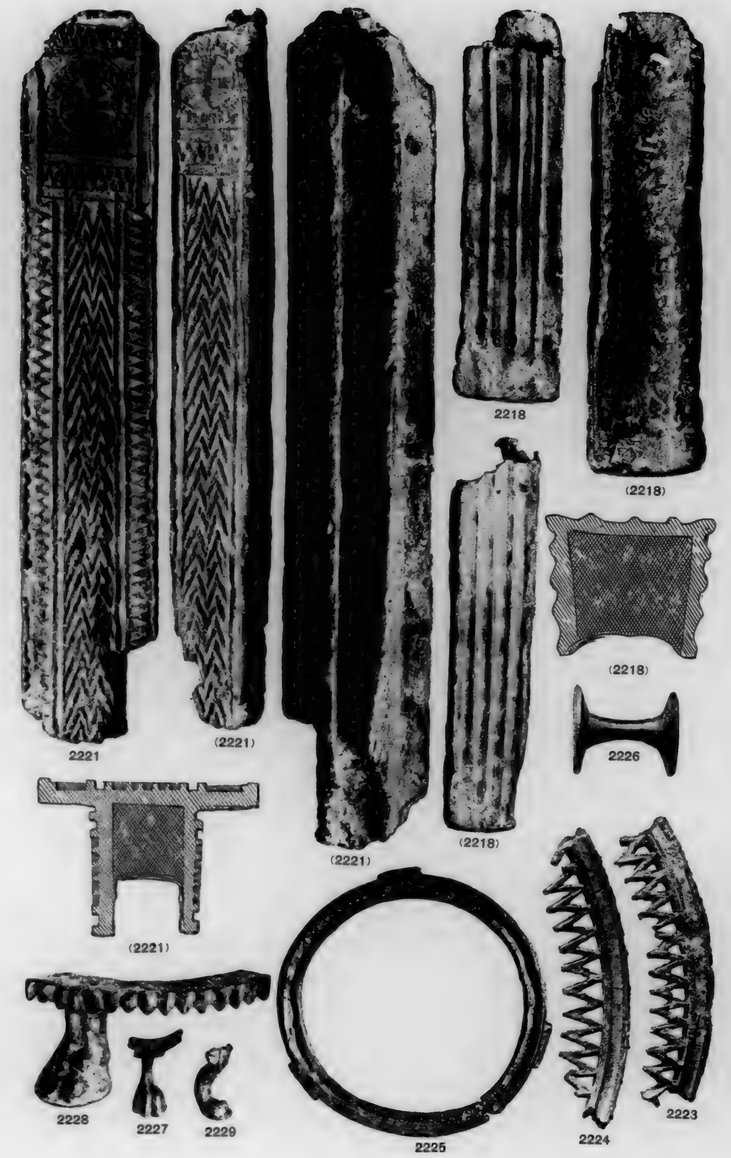
BRONZES.—VERTICAL HANDLES, VARIOUS ORNAMENTS, FRAGMENTS OF LARGE TRIPODS.



BRONZES.—FRAGMENTS OF LARGE TRIPODS. SMALL TRIPOD–STANDARDS



BRONZES.—VERTICAL HANDLES, VARIOUS ORNAMENTS, FRAGMENTS OF LARGE TRIPODS.



BRONZES.—FRAGMENTS OF LARGE TRIPODS. SMALL TRIPOD–STANDARDS



BRONZES.—FEET OF STANDARDS, MISCELLANEOUS VESSELS



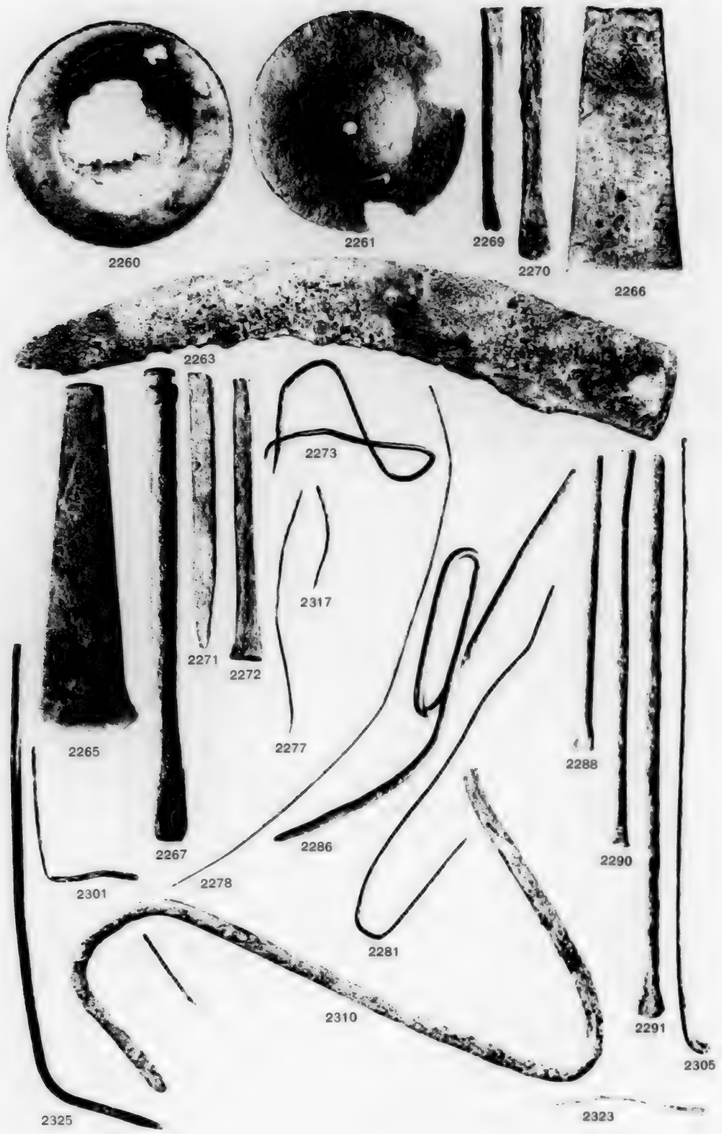
BRONZES.—MISCELLANEOUS VESSELS AND HANDLES, VARIOUS IMPLEMENTS AND UTENSILS



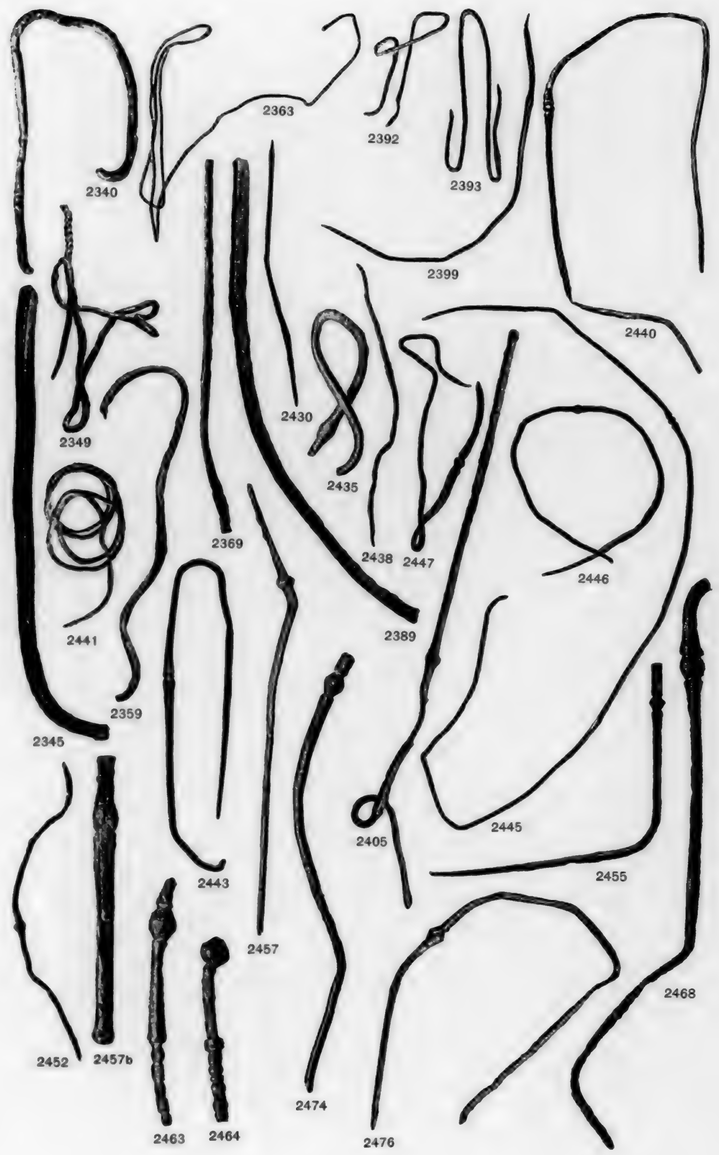
BRONZES.—FEET OF STANDARDS, MISCELLANEOUS VESSELS



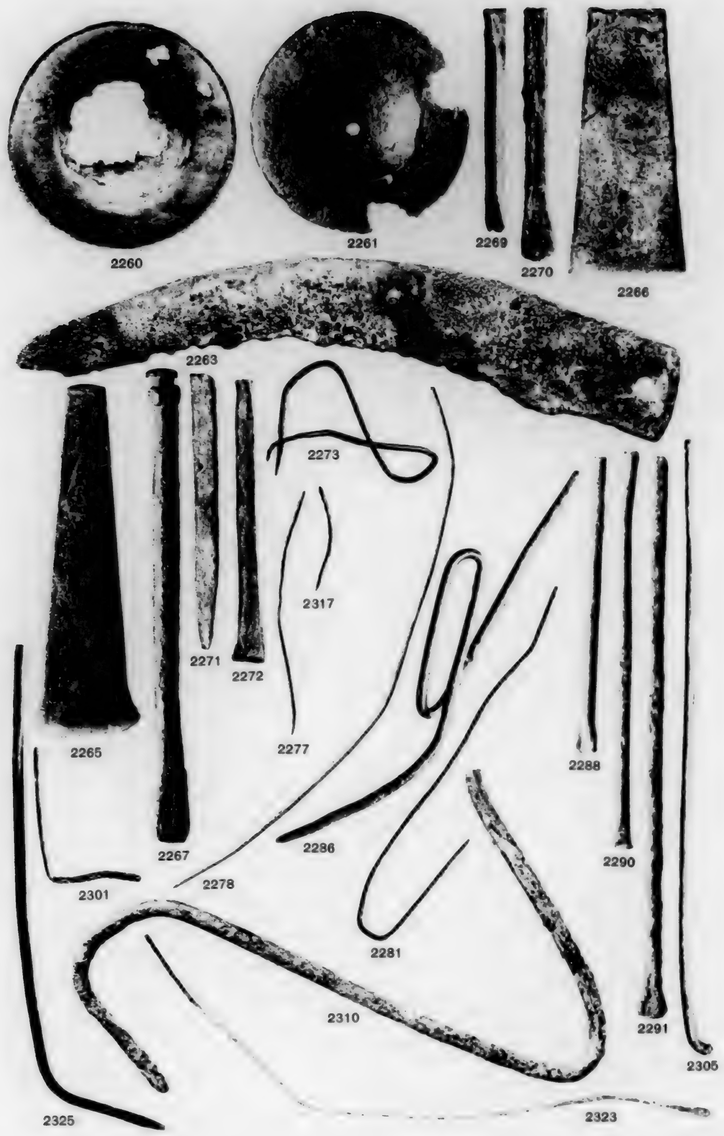
BRONZES.—MISCELLANEOUS VESSELS AND HANDLES, VARIOUS IMPLEMENTS AND UTENSILS



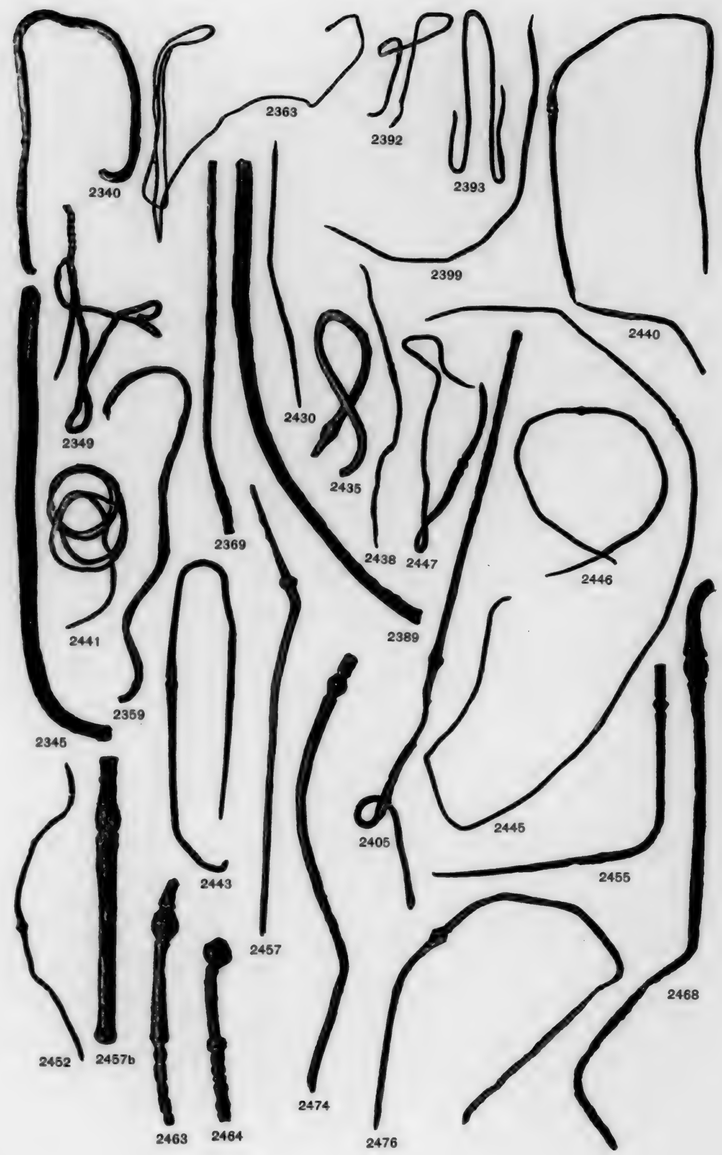
BRONZES.—VARIOUS IMPLEMENTS, SPITS



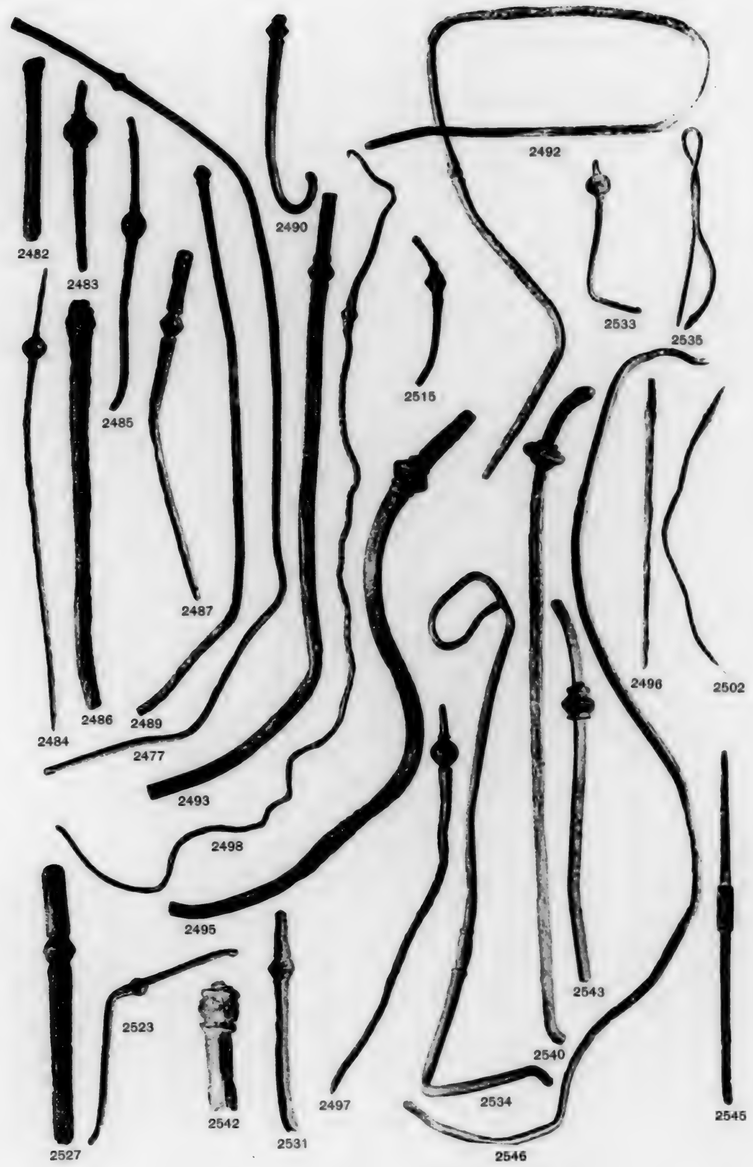
BRONZES.—SPITS



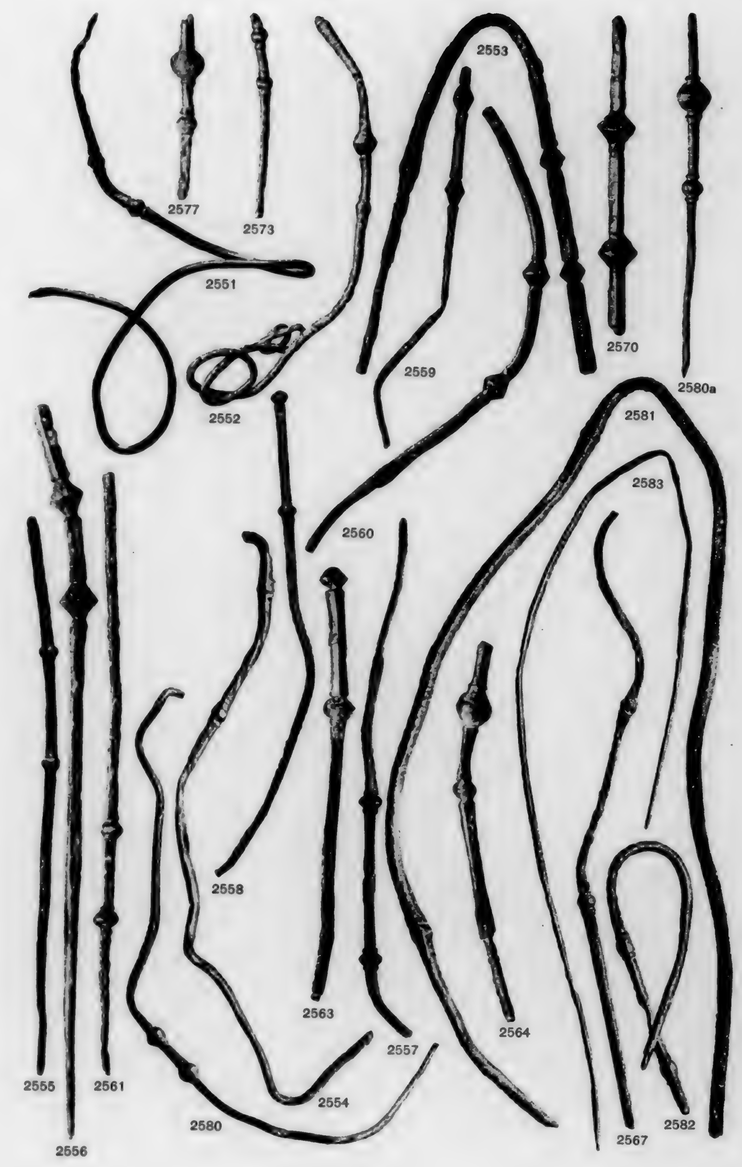
BRONZES.—VARIOUS IMPLEMENTS, SPITS



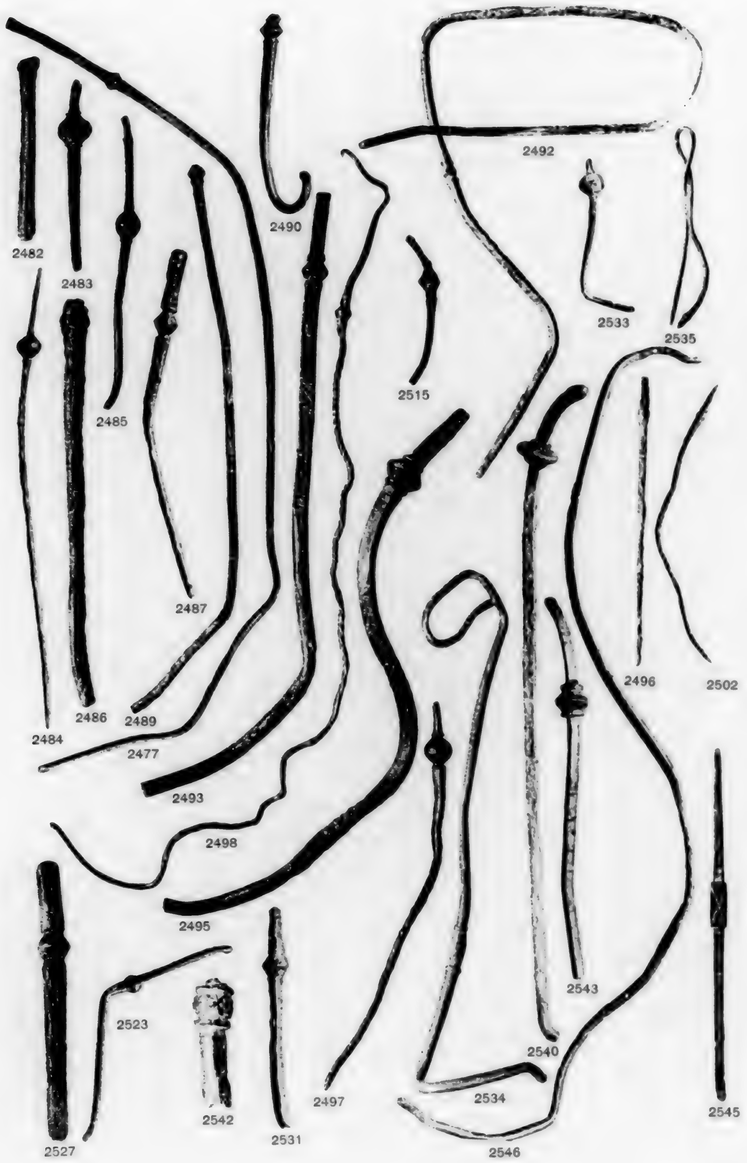
BRONZES.—SPITS



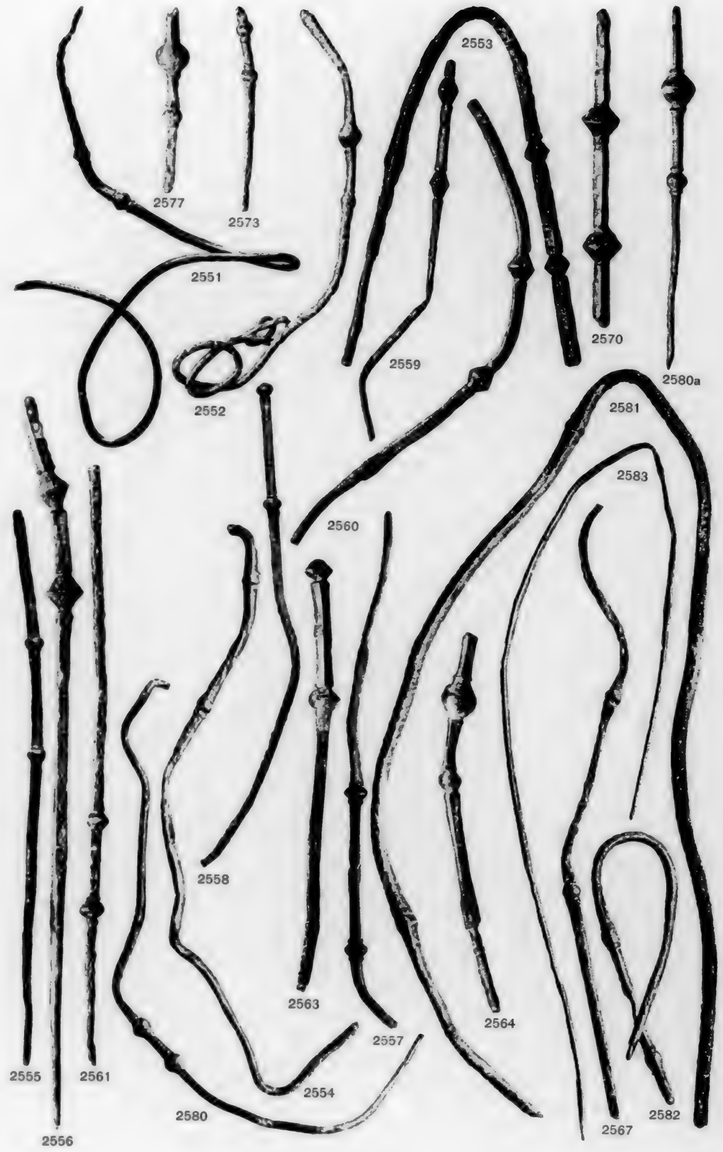
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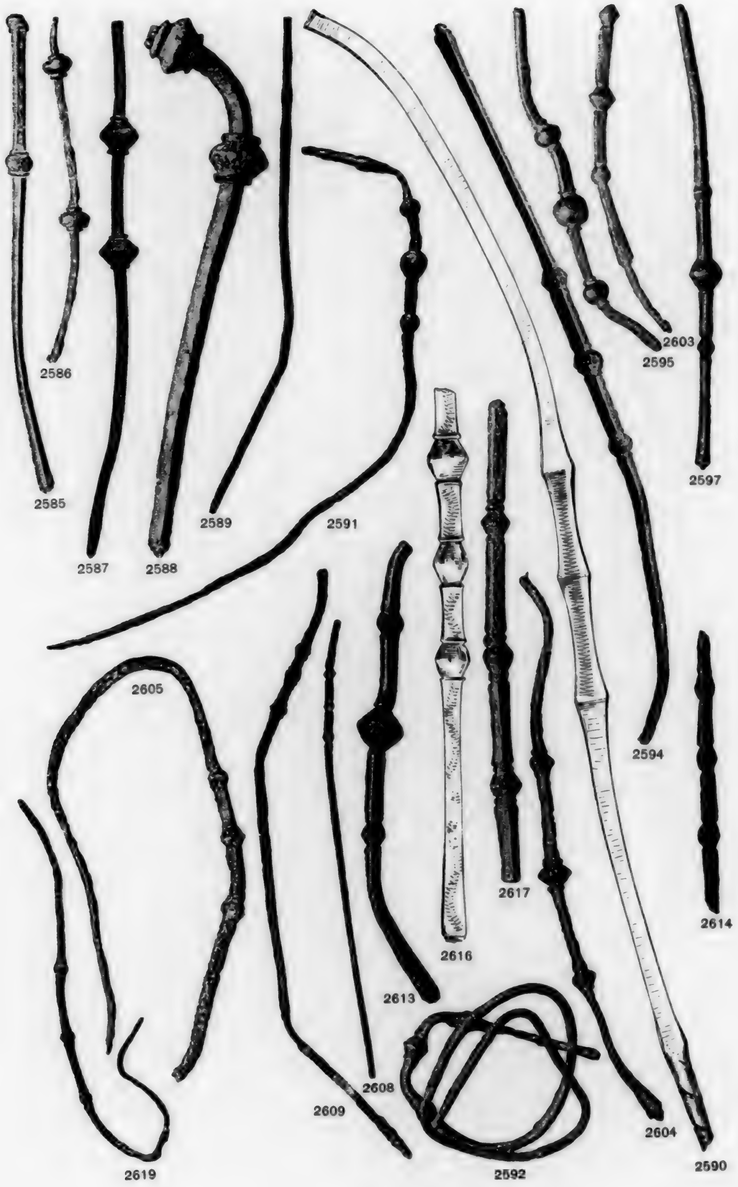
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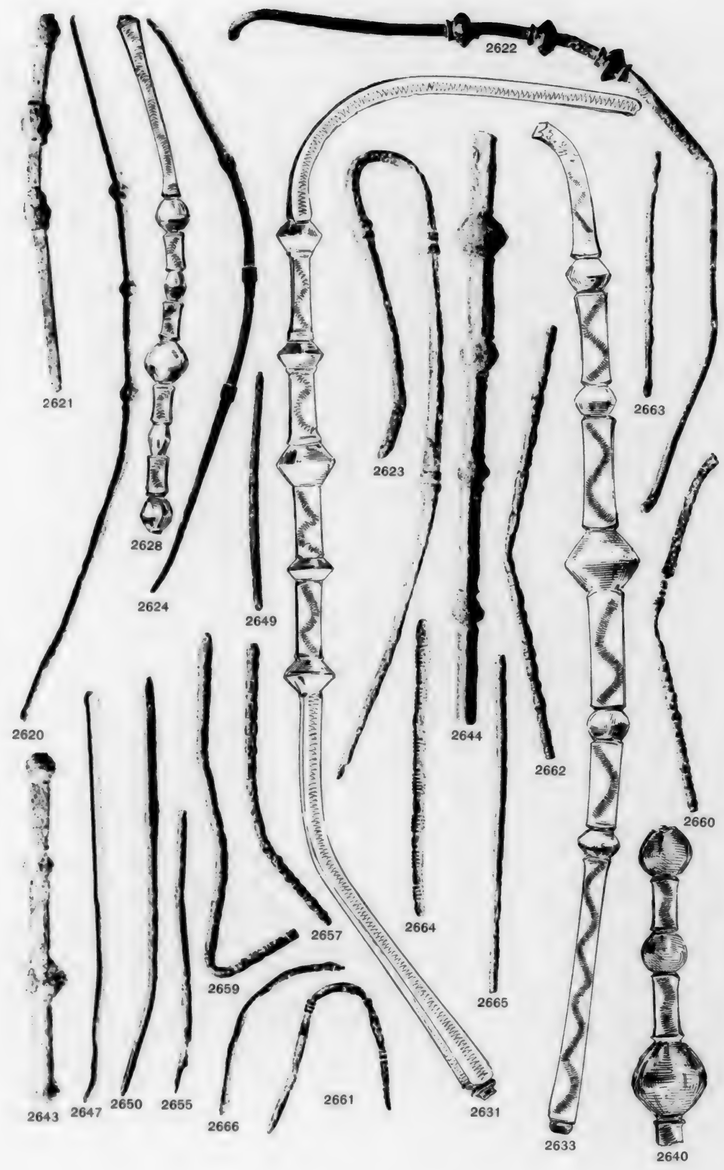
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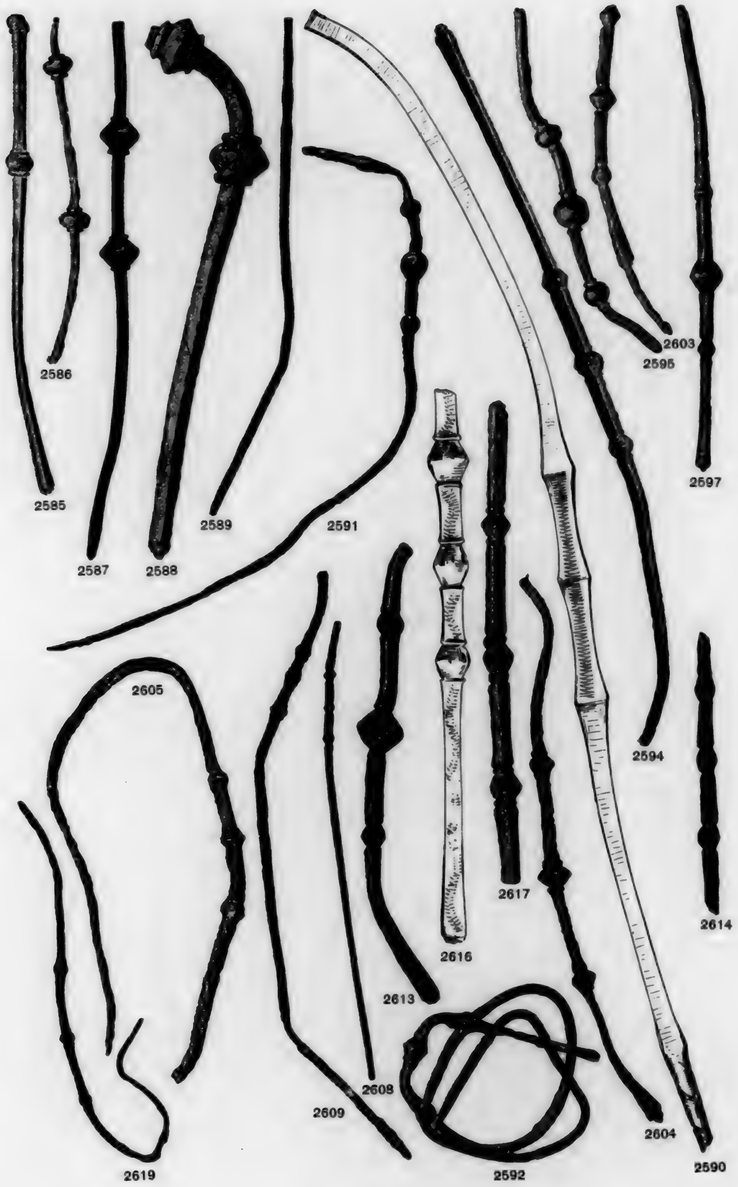
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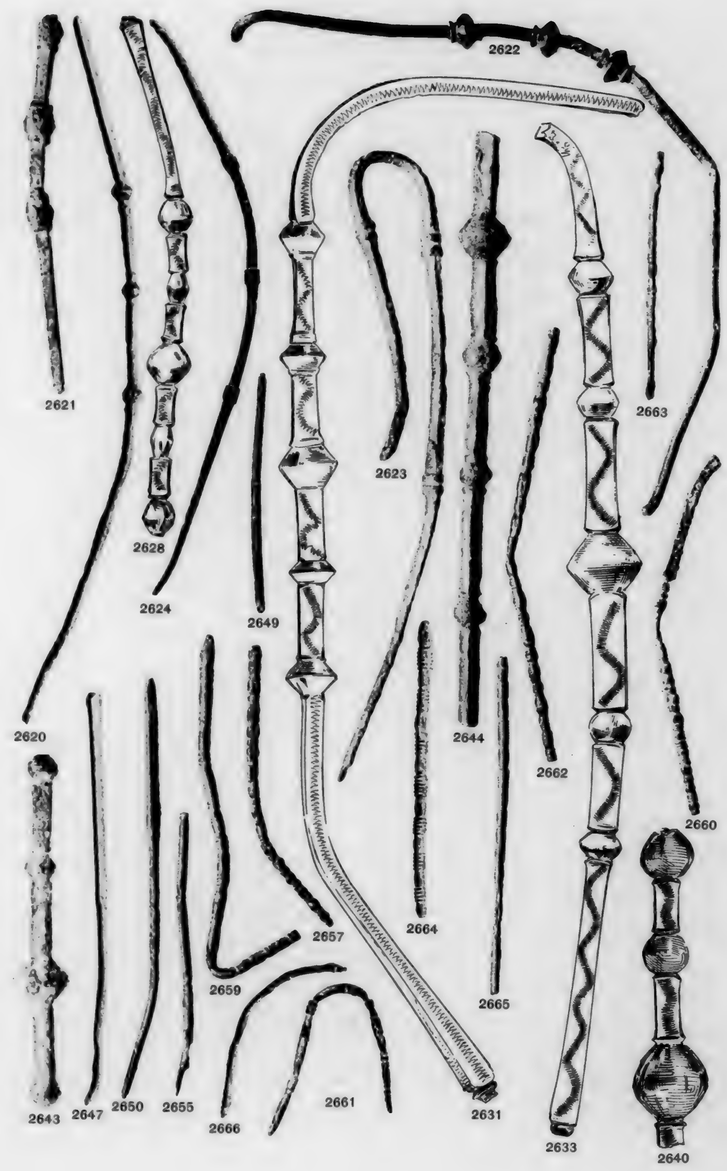
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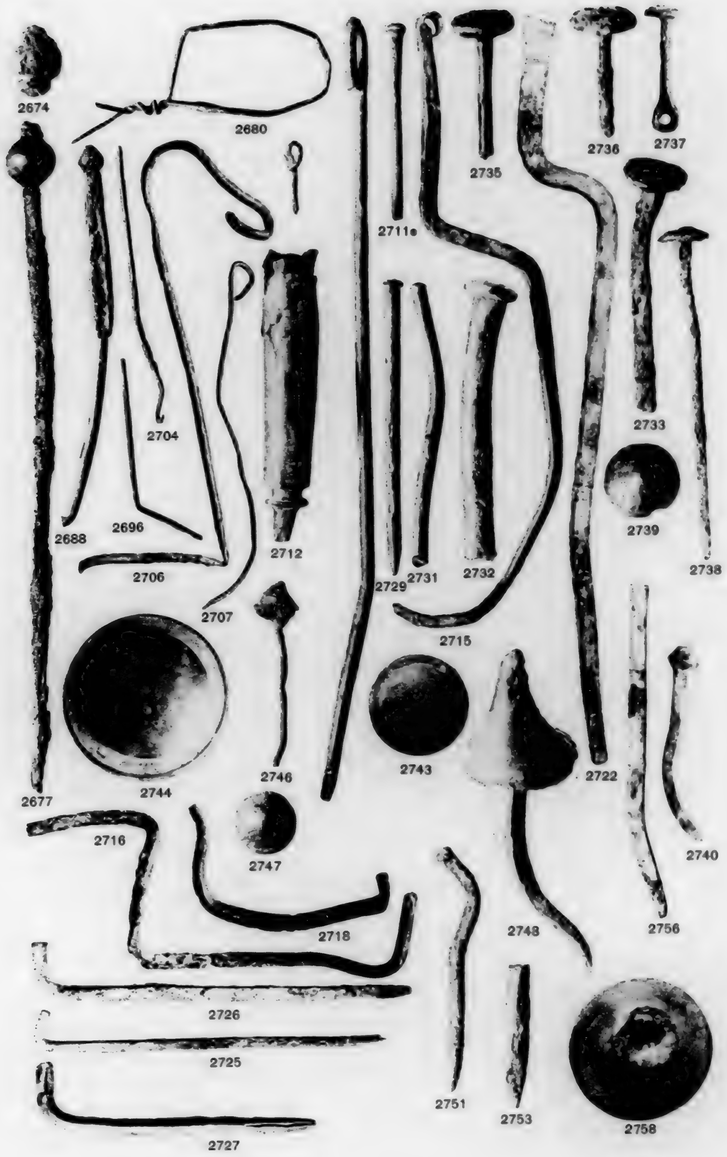
BRONZES.—SPITS



BRONZES.—SPITS



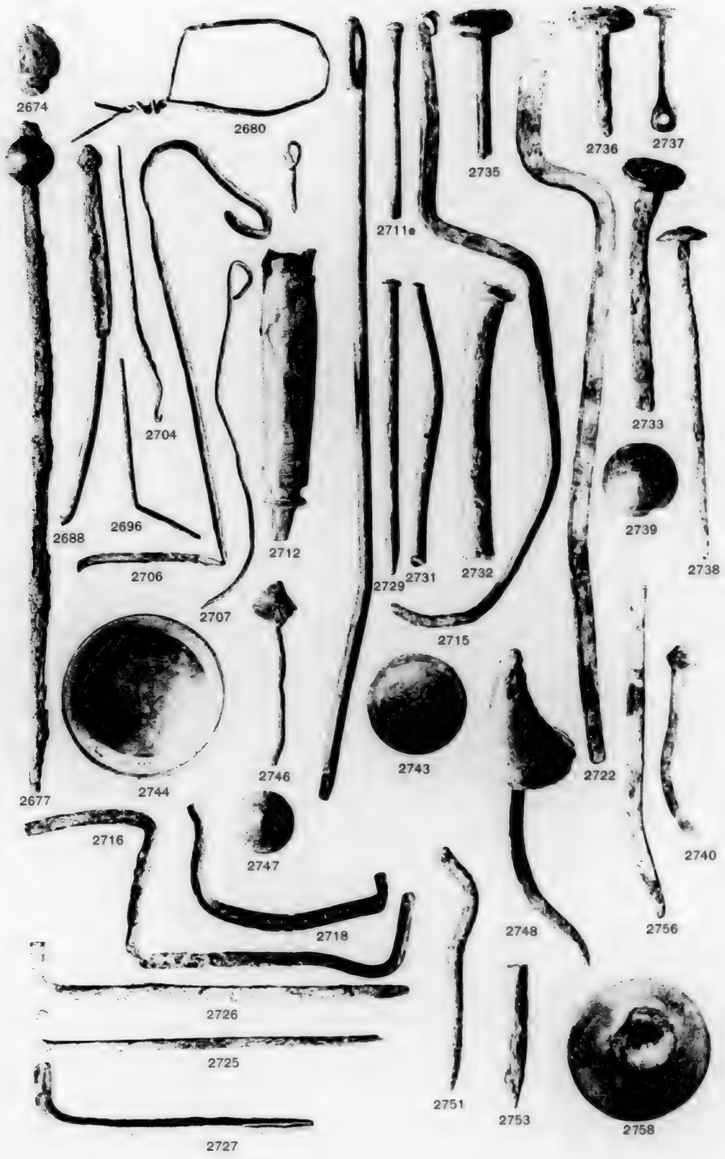
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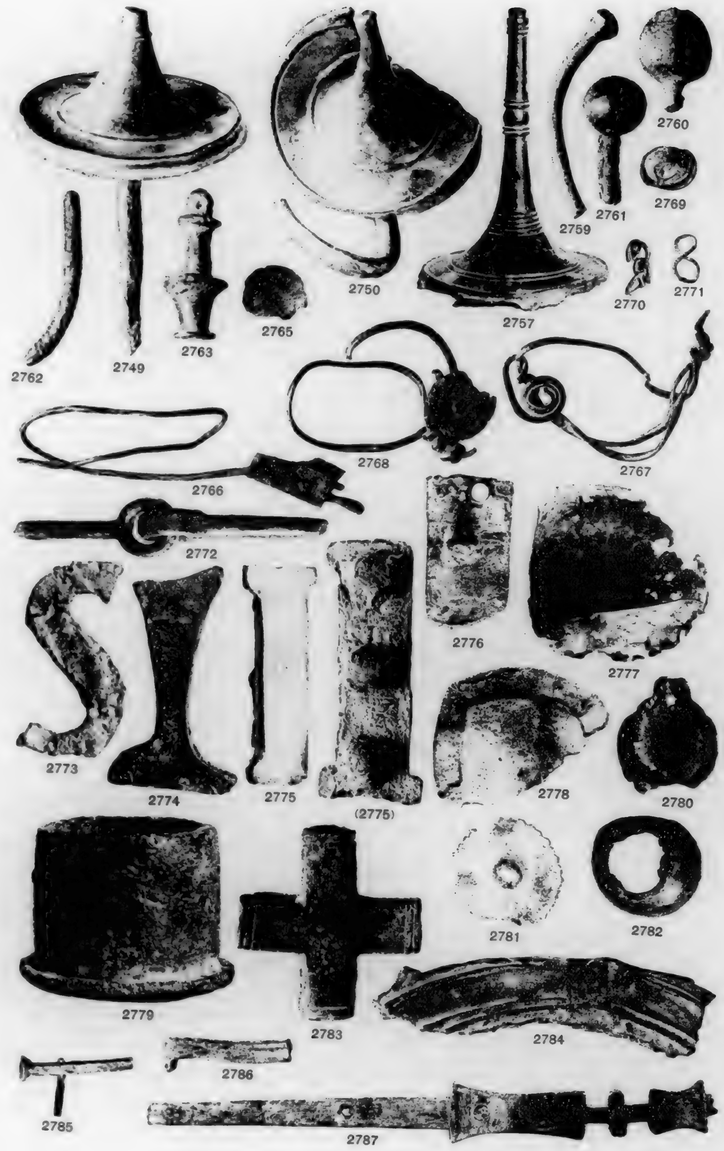
BRONZES.—SPITS, VARIOUS IMPLEMENTS AND UTENSILS



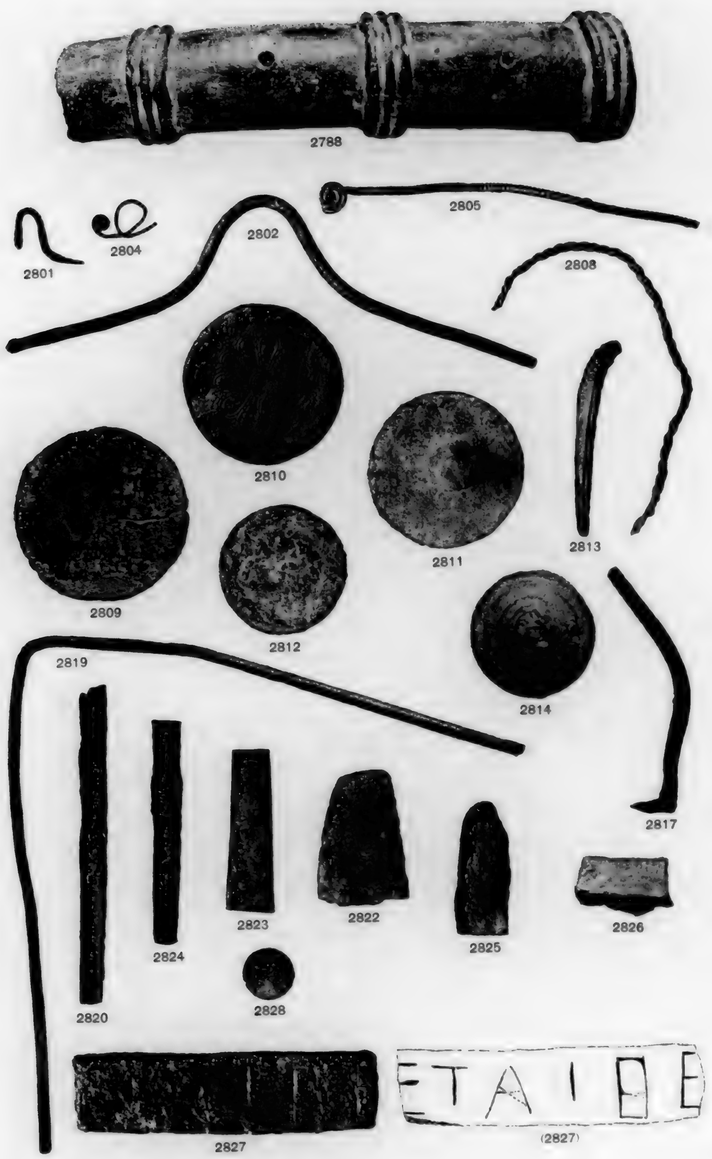
BRONZES.—VARIOUS UTENSILS AND CONSTRUCTIVE PIECES



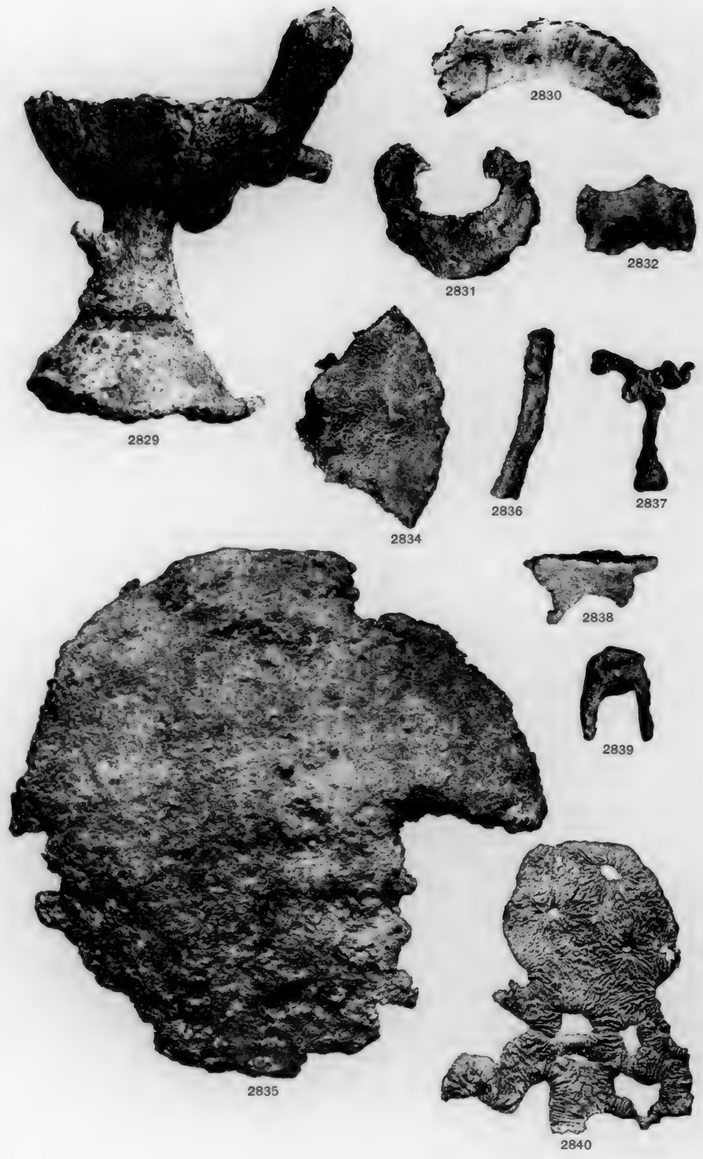
BRONZES.—SPITS, VARIOUS IMPLEMENTS AND UTENSILS



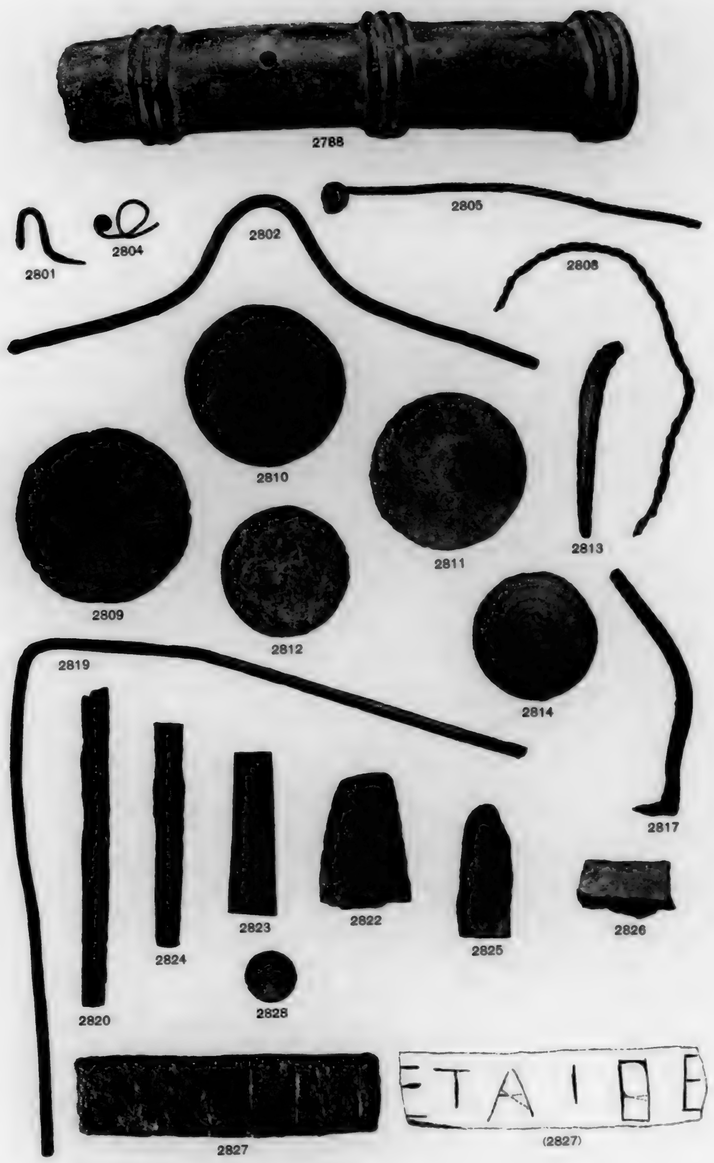
BRONZES.—VARIOUS UTENSILS AND CONSTRUCTIVE PIECES



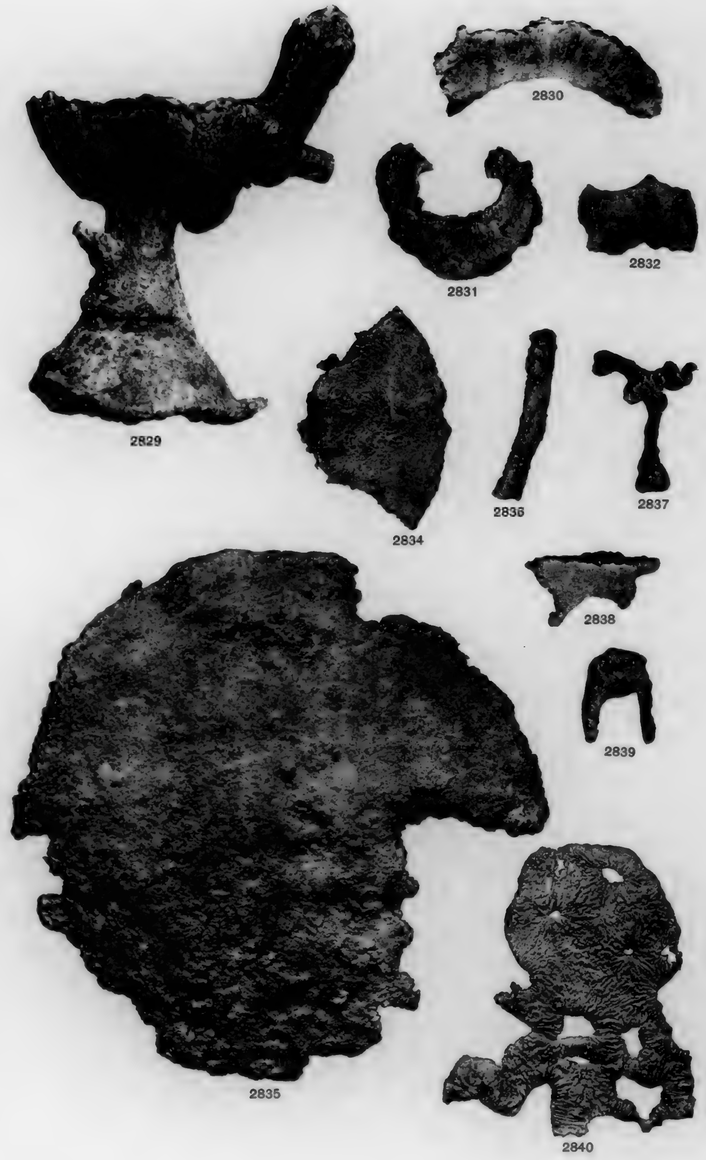
BRONZES.—CONSTRUCTIVE AND DECORATIVE PIECES



BRONZES.—CASTINGS



BRONZES.—CONSTRUCTIVE AND DECORATIVE PIECES



BRONZES.—CASTINGS



WAX IMPRESSION OF SEAL
OF ABOVE SILVER RING (enlarged)

TOP SIDE OF HEAD

UNDER SIDE OF HEAD

SILVER PIN IN BRITISH MUSEUM

BRONZES.—MISCELLANEOUS ADDENDA

ENGRAVED STONES, GEMS, AND IVORIES FROM THE ARGIVE HERAEUM



ENGRAVED STONES, GEMS, AND IVORIES FROM THE ARGIVE HERAEUM

ENGRAVED STONES, GEMS, AND IVORIES

By RICHARD NORTON

THE STONES AND GEMS

The engraved stones found (though only in limited numbers) at the Heraeum might disappoint one who sought among them things of beauty. It is not that they are second-class works of their kind, but they belong to the beginnings of Greek art before the craftsmen had attained to the power which later enabled them to turn into shapes of beauty even the commonest article of daily use. But such disappointment is more than counterbalanced by the interest of another kind inherent in them, — a double interest, in fact, connected in part with the Heraeum and in part with the broader question of the early stages of Greek art.

Not one of these stones is much later than the seventh century B. C., and most of them are probably much earlier. This phenomenon of the absence of late work is the same in the other classes of objects found on the site, the very large majority of which belong to prehistoric and archaic times. But beside this fact there is another equally noteworthy, which is that a large proportion of the stones are of a style heretofore but little known. That is to say, they put before us a new local art, and it can be shown, I believe, that the most probable home of this art was the Heraeum,[1] by which name must be understood the town in the vicinity (which of the many there were we cannot with certainty say) that supplied the needs of the sanctuary.

That they are the product of one locality is suggested by the following facts. (All are, of course, intaglios.)

1. The material is the same in almost all. It is steatite.

2. There is little variety in the shapes, and one or two peculiar forms are frequently repeated. If the stones had been imported from many places, it is certain that they would vary much in form.

3. The range of subjects carved upon them is very limited.

4. The style of the carving is practically the same in all, and in most cases so rude that it would be hard to believe that the ancient Argives should have found it worth their while to import such work.

It is worth noting that there is scarcely a trace of the use of the drill, which was constantly employed by the Mycenaeans. On Nos. **17**, **21**, **33**, and a few others, there seem to be traces of it, but the rule is for the design to be *cut*. This was perhaps induced by the softness of the stone; or the fact that, in the main, only soft stone was used may imply that the drill was not generally known.

The drawing of the human figures and of horses, the representation of birds and snakes (also found in great numbers on the vases from the Heraeum), remind one of 'geometric' vases. A few gems were found that distinctly belong to the 'geometric' style,

[1] I shall use the word Heraeum throughout this article, not as meaning the sacred *temenos*, but in a broader sense, embracing all the neighborhood of the temple where lived the people to whom the sanctuary belonged.

and those of what is I believe a new type may, perhaps, be the forerunner of the 'geometric.' It is noticeable that on the true 'geometric' stones occur none of the odd or inexplicable forms that we see on the new class.

It might be thought that the use of steatite, a mineral not found in Greece proper, was a proof that the stones were imported from some distant place; but when one considers that, as noted above, stones of this style have been found in considerable numbers only at the Heraeum, it seems more likely that it was merely the material and not the finished product that was imported. The carving was then done at the Heraeum. This statement is borne out by the fact that only a very insignificant amount of objects of unquestionable foreign make were found in the excavations, and also by the finding of one or two stones all ready shaped but without any design.

For the detailed study of the stones several methods of classification are possible: according to their material, shape, subject represented, or style. As there are a few stones absolutely different in style from the others while the material is the same, it is manifest that any attempt at classification according to material would be barren of result. Similar reasons make classification according to shape or subject undesirable, so that nothing is left but to classify them, so far as my own judgment goes, according to style. Others may consider that individual stones belong to other classes than those in which I have arranged them, but the separation of the classes in general will, I trust, find acceptance.

Before discussing the stones in detail a word must be said in regard to the use to which such objects were put. They are often spoken of as *seals*, but it seems improbable that their owners used them as such. Had they done so, it is incredible that no impressions of them should ever have been found. I refer of course only to Greece, and not to the countries in the farther east where seals were in common use. Furthermore, what imaginable way is there for their use as seals? Documents that could be sealed by any such stones as these were unknown in the days when they were made. They are too small and insignificant to have been used as marks of proprietorship of objects, — were this extravagant hypothesis to be brought forward, — and the fact that there is a very noticeable repetition of design disproves any such idea. That most of them are bored shows that they were meant for suspension, but were they seals, it is quite certain they would have been given some stiff and permanent setting. Gold rings like those found at Mycenae, or others of less valuable material, might (so far as usability is concerned) — except for the other reasons I have adduced — be called seals. Such rings, however, form but an infinitesimal division of the whole class of these objects. If they were not seals, what were they? Probably, in the majority of cases, amulets. The fact that they are bored suits this explanation. They may well have been worn in old times, as they are still to-day by the women in Crete, hung by a string round the neck. The style of subject carved upon them is well suited to amulets. Religious scenes, for instance, or the figures of strange beings are what one would expect on amulets. When we remember the close relation of animals to deities in ancient times, we see how stones which to our ignorant eyes present only the picture of a cow or lion may, in every likelihood, have conveyed a religious and sacred impression to the original owner. Others, too, suggest from their shape, or size, or carving, that they were merely beads, for it is not at all likely that all were used in the same way. Evans[1] in his epoch-marking works shows reasons to believe that he has found a form of writing on the earliest of these stones.

[1] *Cretan Pictographs and Prae-Phoenician Script* and *Further Discoveries of Cretan and Aegean Script.*

This, however, is no reason for thinking them to be other than amulets; though no one has been able to read the signs found by Evans, and they may possibly be abbreviated prayers or sacred and evil-averting signs.

There is one more question difficult of explanation, and that is how there came to be so many stones of this sort at a place like the Heraeum. I can only suggest the explanation that if these stones were amulets, it may well be that such powerful and sacred objects were made by the priests, — that they were issued from the temple somewhat as indulgences are given out by the Catholic Church. Or it is possible that perhaps after the death of the owner, or at some such solemn moment, they were dedicated in the temple. These are, of course, mere hypotheses.

CLASS I. PREHISTORIC OR PRIMITIVE.

Only eight stones of this sort were found (Nos. 1–8). The only carving on them consists of scratches, and they show no trace of true masterly cutting. Similar scratchings were found by Schliemann on whorls he dug up at Troy, and by other excavators. It is possible that these lines conveyed some meaning to the original owner of the object, but, at present, it is impossible to say what it was. Evans[1] suggests that certain somewhat similar carvings found by him stand for letters. None of the examples from the Heraeum suggest this or anything more than being the haphazard work of an untrained carver. They seem to be merely attempts to decorate the stones with more or less symmetrical patterns.

In shape they show some variety, and it is difficult to explain why the makers of these stones should have been satisfied with such rude carving of designs when they were able to model the forms so comparatively well.

PLATE CXXXVIII.

1. Circular; both sides slightly convex. Bored. Both sides scratched. Dark blue steatite. 1.5 cm. Perhaps a bead. Found during first year's work.

2. Button shape. Double bore-hole. Design: star. 2.8 cm. The stone is broken, but both parts were found. Found on stairs south of Second Temple.

3. Hemispherical. Bored. Scratches on flat surface. Red steatite. Diameter, 1.9 cm. Found back of West Building.

4. Circular; both sides convex. Bored. Both sides scratched. Dark green steatite. 1.8 cm. Found on southeast slope near bottom.

5. Spool shape. Ends concave. Cross lines and circle scratched on one end. Dark red steatite. Diameter, 1.7 cm. The form is, perhaps, an imitation of a fish's vertebra. Found back of South Building, at southwest corner of Second Temple terrace.

6. Flat; circular. Bored through centre. Light green steatite. 1.5 cm. No engraving; accidental scratches. Perhaps a bead. This is one of those which being formed but not decorated implies that the decoration was done at the Heraeum, as do the following. Found back of South Building near No. **5**.

7. Circular and slightly spool-shaped. Not bored. Mottled green steatite. Diameter, 1.8 cm. Thickness, 0.8 cm. Like No. **6**, this is apparently unfinished. Found east of chambers on Second Temple terrace.

8. Steatite pebble. 1.7 cm. long. Perhaps shows the sort of stone used by the engravers. Found during first year's work.

[1] *Cretan Pictographs and Prae-Phoenician Script*, fig. 16, and p. 16 (285).

CLASS II. NEW TYPE — 'ARGIVE.'

The following are stones of a new, or at least very unusual type. There are thirty-three (Nos. **9–41**) of them. They vary considerably in shape: —

1. Hemispherical; 11 (Nos. **9–19**).
2. Button shape; 4 (Nos. **20–23**).
3. Cylindrical; 1 (No. **24**).
4. Shield shape; 1 (No. **25**).
5. Rectangular; 8 (Nos. **26–33**).
6. Lenticular and lozenge; 5 (Nos. **34–38**).
7. Rectangular and oval with animal on top; 3 (Nos. **39–41**).

The designs vary less than the shapes. They fall into three classes: —

1. Human.
2. Animal.
3. Geometric.

Perhaps a fourth class *unintelligible* ought to be added. The stones are often carved on all their various surfaces, whether curved or flat. Of the hemispherical group six have carving only on the flat surface, and the other five have their rounded back decorated with zigzags.

The button-shape group contains but one exception (No. **23**) to the rule that the specimens of this shape have both of their flat surfaces carved.

The one cylindrical stone has one end carved and the other smooth.

The shield-shaped stone is carved only on the flat surface.

The rectangular group also shows one exception (No. **31**) to the same rule.

Three of the five lozenge-shaped stones are carved on both sides; one on only one. One is doubtful (No. **36**).

Of the animal group, No. **41** is the only example that has more than one surface adaptable to carving. In this case the animal is on the edge of the stone and both flat surfaces are carved.

On first sight one sees that these stones have little or nothing to do with the true Mycenaean stones with which it seems, from the proximity of the Heraeum to Mycenae, they might well have had some connection. The few Mycenaean stones that were found in the excavation are easily differentiated from those of the new class, and that so very few Mycenaean ones were found appears to be another bit of evidence to show how little the Heraeum depended on foreign trade for the satisfaction of its needs. The nature of the carving on the new stones, rude and awkward as it is, is quite unlike that of true Mycenaean work. Nor did the Mycenaean carvers show any special preference for steatite, while the subjects which they were fond of representing, such as lions, cows, fish flying, religious and hunting scenes, do not occur on the Heraeum stones. A few stones of the same character as those under discussion have been found in other parts of the Greek world, and they will be noted in connection with the special specimens to which they bear the closest resemblance. Further excavation will undoubtedly bring others to light, but for the present the Heraeum must be considered if not the original source of this work, at least a place where it was in considerable demand.

One curious point in regard to their discovery which may throw light not only on the stones themselves but also on the history of the Heraeum is that none were found on the Old Temple terrace, but all came from the neighborhood of the Fifth-century Temple and

the majority from the south slope, — a spot that seems to have been used for the laying aside of discarded objects. The enormous number of objects of all sorts found in this one place suggests that it may have been used as a sort of burying-ground for things that had, for some now unknown reason, become too sacred for such further mortal use as they had originally served. That there were such burying-grounds is, of course, proved by the discoveries on the Acropolis of Athens.

Hemispherical. All are bored.

9. Zigzag pattern in different directions over back. Design: man and horse, also irregular marks to fill space. Diameter, 2.4 cm. Dark red steatite. Found during first year's work.

10. Smooth back. Design: horse and decorative marks. Red steatite. 2 cm. Much rubbed. Found east of chambers on Second Temple terrace.

11. Zigzags on back (cf. No. **12**). Design: horse and decorative marks. Red steatite. Diameter, 2.9 cm. Found at east end of Stoa below Cyclopean wall.

12. Zigzag on back. Design: horse, beyond which stands man with upraised arms, holding perhaps a sword over the horse's head. Slightly fractured. 3 cm. Found in Northwest Building.

13. Smooth back. Design: man holding something in raised hand; behind him marks similar to those Evans [1] takes to have to do with a house. Red steatite. Diameter, 1.8 cm. Found during first year's work.

14. Zigzags on back. Design: man seated, arms raised. Cf. No. **39**. Red steatite with yellowish streaks. 2.2 cm. Found east of chambers on Second Temple terrace.

15. Half stone, broken along bore-hole. Smooth back. Design: man seated. Cf. No. **14**. Dark blue steatite. 2 cm. Found above east end of Stoa below Cyclopean wall.

16. Smooth back. Design: man standing. There are other marks, but the gem is so broken they are inexplicable. Light blue steatite. 2.1 cm. Found back of West Building in the large deposit.

17. Elongated hemispherical. Smooth back. Design: two men, perhaps fighting. It suggests one of the gold rings from Mycenae. Dark red steatite. 3 cm. × 2.5 cm. Found above east end of Stoa below Cyclopean wall.

18. Not absolutely hemispherical. Three divided rows of arrowhead pattern on back. Design: circle divided into quarters by crossed lines. Each quarter has three 'arrow' markings one within the other. Blue steatite. 2 cm. Found during first year's work.

19. Elongated hemispherical. Smooth back. Design: double axe.[2] Blue steatite. Length, 2.7 cm. Found back of West Building in the large deposit.

Button shape. All are bored (except No. **23**).

20. Much broken. Design, *Large side:* branches of trees [3] surrounded by circle of cog-wheel pattern. *Small side:* snake (?) and lines that are distinct, but scarcely explicable. They do not resemble any of Evans's pictographic signs, and it is plain from the sureness of the cutting that they are not haphazard. They are also quite unlike the ordinary space-filling patterns. It is possible that they represent a horned animal lying down; the head to the left. Red steatite. Large side, 3.5 cm. × 3.75 cm. Small side, 2 cm. Found east of chambers on Second Temple terrace.

21. Design, *Large side:* two figures holding a bough upright between them; below the bough a crescent-shaped object. Snake surrounding left half of design. *Small side:* sunk circle with raised cross, the arms of the latter having incision down the middle. Green steatite. Large side, 2.5 cm. Found near the southeast corner of the Second Temple.

22. Design, *Large side:* two figures holding hands, and in free hand branches; between their feet a bird *upside down*, and below this a snake (?). Between the heads of the figures traces of another bird (?). Cog-wheel circle surrounds the group. *Small side:* scarcely explicable. Perhaps animal with branch above and below. Red steatite. Large side, 3.5 cm. Found on south

[1] *Cretan Pictographs*, p. 38 (307).
[2] Cf. Evans, *Cretan Pictographs*, p. 35 (304).
[3] Cf. Evans, *Cretan Pictographs*, p. 43 (312), and *Further Discoveries*, fig. 16.

slope. A stone of about this size and carved with figures like those on the larger side of this one is in the Museum in Athens. It is uncatalogued, and I could not find whence it came.

23. Not engraved or bored. Pale green steatite. Largest diameter, 2.1 cm. Found at southeast corner of Second Temple terrace, outside peribolus wall.

Cylindrical.

24. Double branch pattern. One end with geometric design, thus:  At other end traces of three drill holes directed along the long axis; stone is broken and was never wholly drilled. Red steatite. Found during first year's work.

Shield shape.

25. Bored. Smooth back. Design: man upright, arms raised. Decorative markings. Incised line around whole. Dark red steatite. 2.8 cm. long. Found above east end of Stoa below Cyclopean wall.

Rectangular. All but No. **31** *bored.*


No. 26.

26. Stone broken through bore-hole, only half preserved. Design: on one side cattle superposed. (For somewhat similar representation of cattle, cf. Evans, *Cretan Pictographs*, fig. 11 a.) Behind cattle unintelligible curved lines. On other side cattle (?) facing, and between them snake (?). On the unbroken edge pattern (see cut). Found back of West Building in the large deposit.

27. Flat (brick shape). Both sides engraved; edges smooth. Design, one side: winged horses. Other side: distinct but unintelligible. Red steatite. 4 cm. × 3 cm. Found at southeast corner of Second Temple terrace, outside peribolus wall.

28. Brick shape. Both sides engraved; edges smooth. Design (same on both sides): animal and decorative marks, framed by straight lines. 1.6 cm. × 2 cm. × 1.1 cm. Found on surface of ground of the Old Temple terrace.

29. Broken along bore-hole, only half found. Both sides and the complete edge engraved. Design: each side divided into two compartments. When the stone was complete there were undoubtedly four such divisions. On one side are squares, one within the other, the smallest having its diagonals drawn. On the other side each division has merely lines drawn parallel to the diagonal, — those in one division from left to right, the other from right to left. On edge 'arrowhead' pattern. Red steatite. 4 cm. Found in the deposit at southwest corner of Second Temple terrace.

30. Broken; only part found. Both sides engraved; edges smooth. Design: on one side deeply cut, but unintelligible (but cf. Evans's sign for a house, *Cretan Pictographs*, p. 37 [308]). Green steatite. 5 cm. × 1 cm. (thick). Found near East Building. Another stone very similar to this one was shown me by Mr. Evans. He obtained it in Delos. It is now, I believe, in the Ashmolean Museum.

31. Bored, and bit of original bronze fastening still in hole. Both sides engraved. Design: on one side two men; one holds branch, other holds weapon (?). The former seems to be clad differently from the latter. Other side: four compartments, each filled with patterns of straight lines. Green steatite. 2.7 cm. × 2.3 cm. Found in deposit at southwest corner of Second Temple terrace.

32. Both sides engraved. Design, on one side: man fighting or hunting; the disk in front of him may be his shield. On other side: animal. Dark blue steatite. 1.7 cm. × 1.4 cm. Found at southeast corner of Second Temple terrace.


No. 33.

33. Only one side engraved. Design: crab or spider[1] and snake. Light green steatite; not bored. 1.9 cm. square. Place of discovery not known.

Lozenge. All are bored.

34. Both sides engraved and deeply cut all around edge, so that it resembles the 'spool' shape. Design, one side: flying bird. Other side: branch. Light green steatite. 2.1 cm. Place of discovery unknown.

[1] Cf. Evans, *Further Discoveries*, figs. 5, 6, and p. 339, pl. ii. 14, 15.

35. Engraved on one side. Design: two winged creatures face to face. Dark red steatite. 1.6 cm. Found at southeast corner of Second Temple terrace.

36. Broken through bore-hole; only half found. Both sides engraved. Design, on one side: bull's-head, full front. On other side: starfish pattern. 1.2 cm. thick. Diameter, circ. 4 cm. Red steatite. Found in deposit back of West Building.

37. Both sides apparently engraved, but are so worn as to be undecipherable. Red steatite (?). 2.4 cm. Found during first year's work.

38. Engraved on both sides. Design, on one side: flying bird. On other: winged animal. Dark red steatite. 1.5 cm. Found on south slope.

Nos. **39–41** *have animals on top.*


No. 39.

39. Bored. Cow (?) lying down. Design: man seated (cf. No. **14**). Red steatite. Length, 1.3 cm. Found during first year's work.

40. Bored (below belly of animal). Monkey-like animal crouching. Design: animals, — very rude and much scattered over field, — perhaps also a scorpion. (Cf. Evans, *Further Discoveries*, fig. 31.) Light red mottled green steatite. Design: 2.5 cm. × 3 cm. Height, 2.5 cm. Found east of the Northwest Building.

41. Animal much worn. Both sides and all three edges engraved. Design on both sides undecipherable. On the edges are these patterns: —


Front End.


Bottom.


Back End.

Found on south slope. Light blue steatite. 2.8 cm. × 2.3 cm.

CLASS III. 'GEOMETRIC' (*CIRC.* TENTH CENTURY B. C.).

The next class of stones to consider are of a type which, though by no means common, is less strange than that of the preceding stones, and can be dated by external evidence. It is the 'geometric' type; a type that is plainly of the same epoch as the 'geometric' vases. These show a distinct advance over the earlier stones in being made of harder material, and in the carving being much stronger and more certain. They show none of the sketchy and tentative quality of the more primitive work. In shape and material, too, they vary from the earlier and from Mycenaean work. All are of a fine-grain white marble, and all are square. One peculiar shape, that of a low truncated pyramid, occurs. The backs have no *figure* design. The bore-hole runs *from back to front*, hence these could not be used as seals.


No. 42.

42. Bored from back to front. Shape: truncated pyramid. Back smooth. Design: two 'geometric' figures to right holding branches (?). Decorative marks. White marble. 3.4 cm. square. (In the Ashmolean Museum is a stone closely resembling this one; it was found in Melos in 1894.) The design is of two figures, and between them a branch. Found at east end of Second Temple terrace, near East Building.

PLATE CXXXIX. (*upper part*).

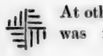
43. Broken at corners. Bored from front to back. Shape: truncated pyramid. On *one* sloping side of back are cut circles with dots in their centres. Design: divided into four equal divisions. Only one, a human figure with space-filling markings, decipherable. Lower part of human figure in a second division. White marble. *Circ.* 4.5 cm. Found in West Building.

44. Fragment. Similar to No. **43**. Square, brick shape, not pyramidal. Design in compartments, but destroyed. Human figure visible on left. White marble. Size originally about same as No. **43**. Found at east end of Second Temple terrace, near East Building.

slope. A stone of about this size and carved with figures like those on the larger side of this one is in the Museum in Athens. It is uncatalogued, and I could not find whence it came.

23. Not engraved or bored. Pale green steatite. Largest diameter, 2.1 cm. Found at southeast corner of Second Temple terrace, outside peribolus wall.

Cylindrical.

24. Double branch pattern. One end with geometric design, thus:  At other end traces of three drill holes directed along the long axis; stone is broken and was never wholly drilled. Red steatite. Found during first year's work.

Shield shape.

25. Bored. Smooth back. Design: man upright, arms raised. Decorative markings. Incised line around whole. Dark red steatite. 2.8 cm. long. Found above east end of Stoa below Cyclopean wall.

Rectangular. All but No. **31** *bored.*


No. 26.

26. Stone broken through bore-hole, only half preserved. Design: on one side cattle superposed. (For somewhat similar representation of cattle, cf. Evans, *Cretan Pictographs*, fig. 11 a.) Behind cattle unintelligible curved lines. On other side cattle (?) facing, and between them snake (?). On the unbroken edge pattern (see cut). Found back of West Building in the large deposit.

27. Flat (brick shape). Both sides engraved; edges smooth. Design, one side: winged horses. Other side: distinct but unintelligible. Red steatite. 4 cm. × 3 cm. Found at southeast corner of Second Temple terrace, outside peribolus wall.

28. Brick shape. Both sides engraved; edges smooth. Design (same on both sides): animal and decorative marks, framed by straight lines. 1.6 cm. × 2 cm. × 1.1 cm. Found on surface of ground of the Old Temple terrace.

29. Broken along bore-hole, only half found. Both sides and the complete edge engraved. Design: each side divided into two compartments. When the stone was complete there were undoubtedly four such divisions. On one side are squares, one within the other, the smallest having its diagonals drawn. On the other side each division has merely lines drawn parallel to the diagonal, — those in one division from left to right, the other from right to left. On edge 'arrowhead' pattern. Red steatite. 4 cm. Found in the deposit at southwest corner of Second Temple terrace.

30. Broken: only part found. Both sides engraved; edges smooth. Design: on one side deeply cut, but unintelligible (but cf. Evans's sign for a house, *Cretan Pictographs*, p. 37 [308]). Green steatite. 5 cm. × 1 cm. (thick). Found near East Building. Another stone very similar to this one was shown me by Mr. Evans. He obtained it in Delos. It is now, I believe, in the Ashmolean Museum.

31. Bored, and bit of original bronze fastening still in hole. Both sides engraved. Design: on one side two men; one holds branch, other holds weapon (?). The former seems to be clad differently from the latter. Other side: four compartments, each filled with patterns of straight lines. Green steatite. 2.7 cm. × 2.3 cm. Found in deposit at southwest corner of Second Temple terrace.

32. Both sides engraved. Design, on one side: man fighting or hunting; the disk in front of him may be his shield. On other side: animal. Dark blue steatite. 1.7 cm. × 1.4 cm. Found at southeast corner of Second Temple terrace.


No. 33.

33. Only one side engraved. Design: crab or spider[1] and snake. Light green steatite; not bored. 1.9 cm. square. Place of discovery not known.

Lozenge. All are bored.

34. Both sides engraved and deeply cut all around edge, so that it resembles the 'spool' shape. Design, one side: flying bird. Other side: branch. Light green steatite. 2.1 cm. Place of discovery unknown.

[1] Cf. Evans, *Further Discoveries*, figs. 5, 6, and p. 339, pl. ii. 14, 15.

35. Engraved on one side. Design: two winged creatures face to face. Dark red steatite. 1.6 cm. Found at southeast corner of Second Temple terrace.

36. Broken through bore-hole; only half found. Both sides engraved. Design, on one side: bull's-head, full front. On other side: starfish pattern. 1.2 cm. thick. Diameter, circ. 4 cm. Red steatite. Found in deposit back of West Building.

37. Both sides apparently engraved, but are so worn as to be undecipherable. Red steatite (?). 2.4 cm. Found during first year's work.

38. Engraved on both sides. Design, on one side: flying bird. On other: winged animal. Dark red steatite. 1.5 cm. Found on south slope.

Nos. **39–41** *have animals on top.*


No. 39.

39. Bored. Cow (?) lying down. Design: man seated (cf. No. **14**). Red steatite. Length, 1.3 cm. Found during first year's work.

40. Bored (below belly of animal). Monkey-like animal crouching. Design: animals, — very rude and much scattered over field, — perhaps also a scorpion. (Cf. Evans, *Further Discoveries*, fig. 31.) Light red mottled green steatite. Design: 2.5 cm. × 3 cm. Height, 2.5 cm. Found east of the Northwest Building.

41. Animal much worn. Both sides and all three edges engraved. Design on both sides undecipherable. On the edges are these patterns: —


Front End.


Bottom.


Back End.

Found on south slope. Light blue steatite. 2.8 cm. × 2.3 cm.

CLASS III. 'GEOMETRIC' (*CIRC.* TENTH CENTURY B. C.).

The next class of stones to consider are of a type which, though by no means common, is less strange than that of the preceding stones, and can be dated by external evidence. It is the 'geometric' type; a type that is plainly of the same epoch as the 'geometric' vases. These show a distinct advance over the earlier stones in being made of harder material, and in the carving being much stronger and more certain. They show none of the sketchy and tentative quality of the more primitive work. In shape and material, too, they vary from the earlier and from Mycenaean work. All are of a fine-grain white marble, and all are square. One peculiar shape, that of a low truncated pyramid, occurs. The backs have no *figure* design. The bore-hole runs *from back to front*, hence these could not be used as seals.


No. 42.

42. Bored from back to front. Shape: truncated pyramid. Back smooth. Design: two 'geometric' figures to right holding branches (?). Decorative marks. White marble. 3.4 cm. square. (In the Ashmolean Museum is a stone closely resembling this one; it was found in Melos in 1894.) The design is of two figures, and between them a branch. Found at east end of Second Temple terrace, near East Building.

PLATE CXXXIX. (*upper part*).

43. Broken at corners. Bored from front to back. Shape: truncated pyramid. On *one* sloping side of back are cut circles with dots in their centres. Design: divided into four equal divisions. Only one, a human figure with space-filling markings, decipherable. Lower part of human figure in a second division. White marble. *Circ.* 4.5 cm. Found in West Building.

44. Fragment. Similar to No. **43**. Square, brick shape, not pyramidal. Design in compartments, but destroyed. Human figure visible on left. White marble. Size originally about same as No. **43**. Found at east end of Second Temple terrace, near East Building.

45. Bit of white marble similar to that used for Nos. **41–44**. Square, 4.2 cm. Edges and both sides carefully worked. Edges curve very slightly outward, which is not the case in Nos. **41–44**. Possibly an unfinished work. Found near No. **44**.

46. Bored from back to front. Back smooth, and edges only beveled very slightly. Design undecipherable. It seems to be merely decorative, and perhaps is a connecting link between the preceding and those that follow. Found above Stoa and below Cyclopean wall.



47–51. All bored from back to front. Backs flat and smooth. Design: decorative (?). White marble. Size: (No. **47**) 2 cm.; (No. **48**) 2 cm.; (No. **49**) 1.8 cm.; (No. **50**) 2.1 cm.; (No. **51**) 1.8 cm. It is noteworthy that the cutting of these differs from that of the preceding in being less angular, and the hollows are curved instead of being sunk to an edge. The designs of Nos. **47**, **48**, and **49** are exactly the same. Another stone of this same sort was bought by me in Athens in the spring of 1898. It is 3.3 cm. square and fractured at one corner (see adjacent cut).

No. **47** was found near East Building.

Nos. **48**, **49**, **50**, found in deposit back of West Building.

No. **51**, found at southeast corner of Second Temple terrace, within the peribolus wall.

CLASS IV. MYCENAEAN.

The Mycenaean stones do not call for special comment. It is, however, noteworthy that so few stones of this class were found. Considering the proximity of Mycenae, one might well have expected them to be among the objects often found at the Heraeum.

52. Circular-lenticular. Bored. Design: animal to left and bough over its back. Blue steatite. 2 cm. Found in South Building.

53. Circular-lenticular. Bored. Design: horned animal (bull?) to right, head turned over back. Branch vertically in front of animal and below the beast decorative marks. Dark blue steatite. 1.7 cm. Found in South Building.

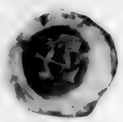
54. Circular, flat. Bored. Design: horned animal to right. Red steatite. 1.3 cm. Stone very much rubbed. Found at southeast corner of Second Temple terrace.



No. 55.

55. Fragment of large (probably 3–4 cm. diameter) circular-lenticular stone. Undoubtedly bored. Cornelian. Design: two cattle to left, the further one turning head backward. Best Mycenaean work. Place of discovery unknown.

56. Circular, flat. Bored. Design: two fore-quarters of horned animal joined; branch in front of one of the animals. Found in deposit at southwest corner of Second Temple terrace.



No. 57.

57. Circular. Back slightly convex. Bored. Design: anthropomorphic monster running. White calkspar. 1.3 cm. Found near West Building.

58. Lenticular. Bored. Design: griffin to right and below dolphin upside down to left. Hard white stone. 1.9 cm. long. Found near West Building.

CLASS V. NONDESCRIPT.



No. 59.

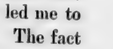
59. Cylinder. Bored. Design: eagle, snake (above its head star), and fore-part of lion (with something in front of head). Light green steatite, 1 cm. long. Found at southeast corner of Second Temple terrace.

60. Earth glazed with gray slip now much destroyed. Circular. Bored. Back smooth. Design: three rows of three crosses or dots divided by two pairs of parallel lines. Diameter, 1.3 cm. Found on south slope.

61. Earth glazed. Glaze destroyed. Circular. Bored. Incised line around edge. Design: griffin seated to right and snake (?). Rosette on back. Diameter, 1.7 cm. Cf. Ivory, No. **7**. Found on south slope.

THE IVORIES.

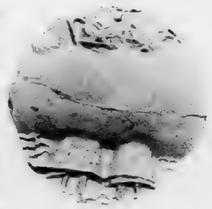
Among the smaller antiquities found at the Heraeum were a considerable number of objects of ivory representing many different purposes, most of which can be easily understood. Some are more difficult to comprehend, and are particularly interesting because of the similarity they bear to certain of the stones that have been described above.

The use of the following objects is uncertain. They are all of them bored, and this, taken into consideration with their peculiar shape (in section ), has led me to wonder whether they might not have been used as covers of bottles or vases. The fact that they are carved on both sides does not preclude the possibility of such a use. One similar bit of worked ivory was found at Olympia (*Olympia*, 'Bronzen,' p. 188, 1194).

There are several points that are common to all five examples to be noted. All are bored. All are engraved on both sides. All are the same shape and nearly the same size. All have a more elaborate border on the smaller side, the larger side having merely a line.

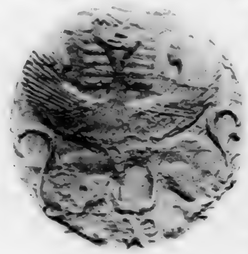
PLATE CXXXIX. (*lower part*).

1. Design, *Large side:* Winged griffin seated to left. Right paw raised. *Small side*: Lioness seated, head turned back, right paw raised. Between front legs star of dots. Greater diameter, 4.6 cm. Broken. Found at southwest corner of Second Temple.



No. 4.

2. Design, *Large side:* Winged man-headed griffin with ornament projecting from head, seated to left. Right paw raised; between paws flying double-headed bird to left. *Small side:* Lion in same position as lioness on No. **1**, with three stars of dots and lines between front feet. Greater diameter, 4.5 cm. Found in black layer at west end of Second Temple.



No. 5*a*.

3. Design, *Large side:* Lion seated to right. Right paw raised. Head turned back. Decorative dot in front of and behind head. *Small side:* Eagle flying to right. Greater diameter, 4.6 cm. Broken. Found during first year's work, *probably* at west end of Second Temple.



No. 5*b*.

4. Design, *Large side:* Two winged gorgons holding branches. *Small side:* Lion running to right. Head with crest turned back. Decorative stars. Greater diameter, 4.4 cm. The lion is less Oriental in type than those on the preceding ivories. The drawing of the paws suggests the early Attic vases. Found at southwest corner of Second Temple terrace.

5. Design, *Large side:* Double, winged, single-headed gorgon, seated with front paws on support shaped like an Ionic capital. The hair is rolled, as on the Tenean Apollo. *Small side:* Eagle flying to right. Elaborate detail. Six ornamental dots, one above bird, one below, one above and one below head, one above and one below root of tail. Greater diameter, 5.3 cm. Found at southeast corner of Second Temple terrace.

The following are apparently ornaments of various sorts.

6. Circular bit of ivory. One side convex, other flat and edge beveled. Small hole in centre of flat surface. No decoration. Diameter, 4.2 cm. Found on south slope. 

45. Bit of white marble similar to that used for Nos. **41–44**. Square, 4.2 cm. Edges and both sides carefully worked. Edges curve very slightly outward, which is not the case in Nos. **41–44**. Possibly an unfinished work. Found near No. **44**.

46. Bored from back to front. Back smooth, and edges only beveled very slightly. Design undecipherable. It seems to be merely decorative, and perhaps is a connecting link between the preceding and those that follow. Found above Stoa and below Cyclopean wall.



47–51. All bored from back to front. Backs flat and smooth. Design: decorative (?). White marble. Size: (No. **47**) 2 cm.; (No. **48**) 2 cm.; (No. **49**) 1.8 cm.; (No. **50**) 2.1 cm.; (No. **51**) 1.8 cm. It is noteworthy that the cutting of these differs from that of the preceding in being less angular, and the hollows are curved instead of being sunk to an edge. The designs of Nos. **47**, **48**, and **49** are exactly the same. Another stone of this same sort was bought by me in Athens in the spring of 1898. It is 3.3 cm. square and fractured at one corner (see adjacent cut).

No. **47** was found near East Building.

Nos. **48**, **49**, **50**, found in deposit back of West Building.

No. **51**, found at southeast corner of Second Temple terrace, within the peribolus wall.

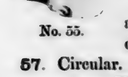
CLASS IV. MYCENAEAN.

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52. Circular-lenticular. Bored. Design: animal to left and bough over its back. Blue steatite. 2 cm. Found in South Building.

53. Circular-lenticular. Bored. Design: horned animal (bull?) to right, head turned over back. Branch vertically in front of animal and below the beast decorative marks. Dark blue steatite. 1.7 cm. Found in South Building.

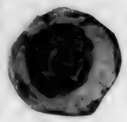
54. Circular, flat. Bored. Design: horned animal to right. Red steatite. 1.3 cm. Stone very much rubbed. Found at southeast corner of Second Temple terrace.



No. 55.

55. Fragment of large (probably 3–4 cm. diameter) circular-lenticular stone. Undoubtedly bored. Cornelian. Design: two cattle to left, the further one turning head backward. Best Mycenaean work. Place of discovery unknown.

56. Circular, flat. Bored. Design: two fore-quarters of horned animal joined; branch in front of one of the animals. Found in deposit at southwest corner of Second Temple terrace.



No. 57.

57. Circular. Back slightly convex. Bored. Design: anthropomorphic monster running. White calkspar. 1.3 cm. Found near West Building.

58. Lenticular. Bored. Design: griffin to right and below dolphin upside down to left. Hard white stone. 1.9 cm. long. Found near West Building.

CLASS V. NONDESCRIPT.



No. 59.

59. Cylinder. Bored. Design: eagle, snake (above its head star), and fore-part of lion (with something in front of head). Light green steatite, 1 cm. long. Found at southeast corner of Second Temple terrace.

60. Earth glazed with gray slip now much destroyed. Circular. Bored. Back smooth. Design: three rows of three crosses or dots divided by two pairs of parallel lines. Diameter, 1.3 cm. Found on south slope.

61. Earth glazed. Glaze destroyed. Circular. Bored. Incised line around edge. Design: griffin seated to right and snake (?). Rosette on back. Diameter, 1.7 cm. Cf. Ivory, No. **7**. Found on south slope.

THE IVORIES.

Among the smaller antiquities found at the Heraeum were a considerable number of objects of ivory representing many different purposes, most of which can be easily understood. Some are more difficult to comprehend, and are particularly interesting because of the similarity they bear to certain of the stones that have been described above.

The use of the following objects is uncertain. They are all of them bored, and this, taken into consideration with their peculiar shape (in section ⊏⊐), has led me to wonder whether they might not have been used as covers of bottles or vases. The fact that they are carved on both sides does not preclude the possibility of such a use. One similar bit of worked ivory was found at Olympia (*Olympia*, 'Bronzen,' p. 188, 1194).

There are several points that are common to all five examples to be noted. All are bored. All are engraved on both sides. All are the same shape and nearly the same size. All have a more elaborate border on the smaller side, the larger side having merely a line.

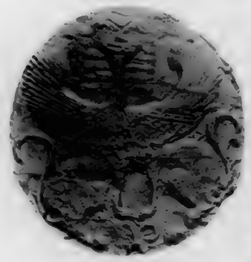
PLATE CXXXIX. (*lower part*).

1. Design, *Large side:* Winged griffin seated to left. Right paw raised. *Small side:* Lioness seated, head turned back, right paw raised. Between front legs star of dots. Greater diameter, 4.6 cm. Broken. Found at southwest corner of Second Temple.



No. 4.

2. Design, *Large side:* Winged man-headed griffin with ornament projecting from head, seated to left. Right paw raised; between paws flying double-headed bird to left. *Small side:* Lion in same position as lioness on No. **1**, with three stars of dots and lines between front feet. Greater diameter, 4.5 cm. Found in black layer at west end of Second Temple.



No. 5 *a*.

3. Design, *Large side:* Lion seated to right. Right paw raised. Head turned back. Decorative dot in front of and behind head. *Small side:* Eagle flying to right. Greater diameter, 4.6 cm. Broken. Found during first year's work, *probably* at west end of Second Temple.



No. 5 *b*.

4. Design, *Large side:* Two winged gorgons holding branches. *Small side:* Lion running to right. Head with crest turned back. Decorative stars. Greater diameter, 4.4 cm. The lion is less Oriental in type than those on the preceding ivories. The drawing of the paws suggests the early Attic vases. Found at southwest corner of Second Temple terrace.

5. Design, *Large side:* Double, winged, single-headed gorgon, seated with front paws on support shaped like an Ionic capital. The hair is rolled, as on the Tenean Apollo. *Small side:* Eagle flying to right. Elaborate detail. Six ornamental dots, one above bird, one below, one above and one below head, one above and one below root of tail. Greater diameter, 5.3 cm. Found at southeast corner of Second Temple terrace.

The following are apparently ornaments of various sorts.

6. Circular bit of ivory. One side convex, other flat and edge beveled. Small hole in centre of flat surface. No decoration. Diameter, 4.2 cm. Found on south slope. ⬭

7. Circular. Design: griffin. Back of ivory slightly convex, decorated with raised rosette having small hole in centre. Diameter, 2.7 cm. Cf. stone No. **61**. Found at east end of Second Temple terrace, near East Building.

8. Similar to No. **7**. No design. Hole bored through. Diameter, 3.6 cm. Found in burnt layer at west end of Second Temple.

9. Circular. Flat on both sides. Bored. Design: frog (?) with tail (?), seen from above. On back of ivory rosette. Diameter, 1.5 cm. Found in same place as No. **8**.

10. Circular. Flat. Bored. Design: five circles with centres dotted (like a dice), the outer circles connected with the inner one by straight lines. On other side rosette. Diameter, 1.7 cm. Found during first year's work.

11. Button shape. Bored. Design, *Large side:* Bird flying to right within circle. *Small side:* Four-leafed rosette within 'cog-wheel' circle. Greater diameter, 1.8 cm. Found at southeast corner of Second Temple terrace, outside peribolus wall.

12. Circular. Flat. Bored, and little hole in centre of each side. Design: eagle with snake in beak flying to left, circumscribed by three circles. On other side rosette. Diameter, 2 cm. Found in burnt layer at west end of Second Temple.

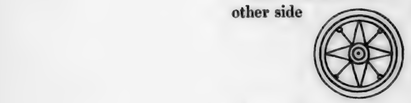
13. Same shape as Nos. **1–5**. Bored. Design, *Large side:* Swan to left; behind head four-pointed star, circumscribed by two circles. *Small side:* Flying fish (?) to right, circumscribed by two circles. Greater diameter, 2 cm. Found in same place as No. **12**.

14. Circular scarab. Broken. Design: bird flying to right, circumscribed by two circles. Diameter, 1.4 cm. Found in same place as No. **12**.

15. Circular. Bored (split through bore-hole and top not found). Design: bird flying to right. Diameter, 1.5 cm. Found during first year's work.

16. Button shape. Bored. Design: Androsphinx to right, circumscribed by circle on each side. Greater diameter, 2.7 cm. Found in West Building.

17. Circular. Flat. Bored. Design: bird flying to right, circumscribed by three circles. On other side



Diameter, 2.3. Found in West Building.

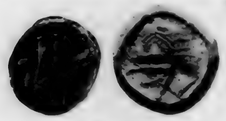
18. Circular. Flat. Bored, — broken through bore-hole. Design: on one side, butterfly (?). On other side, rosette, so much rubbed that it is impossible to be sure of the design. Diameter, 2.5 cm.

19. Circular. Bored. Fragment of one side showing rosette. Diameter, 3.2 cm. Found in burnt layer at west end of Second Temple.

20. Circular. Flat and very thin. Small hole through centre. Design: six-petaled star. Back smooth. Diameter, 2.1 cm. Found near East Building on Second Temple terrace.

21. Circular. Bored. Too much worn to tell what the decoration was. Probably animal to left. Diameter, 1.6 cm. Found in West Building.

22. One half of spool-like object. Bored. Diameter of top, 2.6 cm. Found near East Building on Second Temple terrace.



No. 27.

23. Fragment, probably of No. 22.

24. Button shape. Unengraved. Place of discovery not known.

25. Oval slice with bit of bronze through centre. Perhaps ornament of a fibula. Found during first year's work.

26. Rectangular bead. Bored lengthwise. Arrowhead pattern on opposite sides. 2 cm. × .9 cm. × 5 cm. West Building.

PLATE CXL.

27. Cubical bead. Bored. Circles cut round bore-hole. Two ends and two sides engraved. On one end, head of griffin, on other bird. Both sides decorative. Length, 2.1 cm. Found on south slope.



No. 28.

28. Similar to last. On two sides flying bird. On two ends decorative pattern of wings (?) similar to last. Length, 3.6 cm. Found at west end of Second Temple.

29. Fragment. Shape similar to last. Design. Seated figure. Seated griffin. Length, 2.1 cm. Found *probably* in West Building.



No. 29.

30. Fragment of flat disk. Bored. Diameter, 2.7 cm. Place of discovery unknown.

31. Fragment. Shaped like a large-necked flat aryballos. Both sides split off. Height, 2.1 cm. Found at west end of Second Temple.

ARTICLES OF APPAREL OR OF HOUSEHOLD USE.

32. Fibula, of which the bronze pin is oxidized away. Design: one thin strip of ivory cut to resemble three disks in a row. Each disk decorated with patterns of circles. Length, 6.6 cm. Found in the deposit at southwest corner.

33. Fragment of fibula similar to last. Bronze pin still attached. Central one of the three disks represented by only a section. The hollowed-out circles in centres of two end disks and on each side of central section probably originally inlaid. Length (of fragment), 4 cm. Found at southwest corner of Second Temple.

34. Fragment of end disk of fibula of same design as No. **32**. Found at southwest corner of Second Temple.

35. Fragment of end disk of fibula of same design as No. **33**. Found at southwest corner of Second Temple.

36. Fragment. Perhaps head of large pin (like a hairpin). At base two rams back to back. Length, 7 cm. Found east of Northwest Building.

37. Fragment. Perhaps of pin. Both sides decorated with incised circles. Length, 3.3 cm. Found at southeast corner of Second Temple.

38–43. Fragments of worked ivory, the uses of which cannot be made out. Lengths: (No. **38**) 4.1 cm.; (No. **39**) 2.7 cm.; (No. **40**) 1.5 cm.; (No. **41**) 1.1 cm.; (No. **42**) 3.4 cm.; (No. **43**) 3.6 cm. Nos. **42** and **43** are bored lengthwise, and in the hole is bronze wire. All found in deposit at southeast corner.

44–46, 47–58, 59. Ivory bodkins and heads of bodkins of simple undecorated type. Most were found in the deposit at the southeast corner, as were also the following items.

60. Head of bodkin of more elaborate type or pin.

61–65, 66, 67, 68. Ivory pins. Many were found in or near the West Building, or in the deposit at southwest corner.

69. Head of pin. Same shape as that of numerous bronze pins found at the Heraeum.

70–72. Fragments, perhaps of pins.

73–83. Fragments of bodkins or pins.

84. Small circular-bowled spoon.

85. Use uncertain, perhaps a stylus.

86. Use uncertain.

HUMAN OR ANIMAL FIGURES.

87. Animal lying down. Head and upper half of body destroyed. Base formed of thin sheet of ivory 3 cm. × 1.6 cm. Found in West Building.

88. Plaque, on which in low relief are the lower halves of two figures. On left a man moving to right towards what was probably meant for a xoanon. The latter from the drapery was evidently of a goddess. The tunic of the man and the chiton of the statue are very carefully ornamented with patterns of squares and diamonds. Style of the end of the sixth century B. C.

89. Figure like the Egyptian god Bes. Bored. Much broken.

MISCELLANEOUS OBJECTS.

About a dozen fragments of colored glass ("Phoenician") bottles.

Several glass and two or three stone beads.

Few fragments of obsidian.

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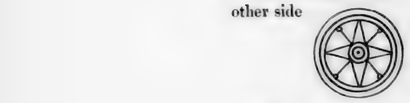
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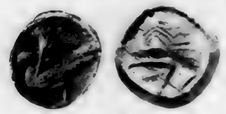
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Bit of shell of bird's egg — probably ostrich.



Two beads of glazed paste.
Terra-cotta disk with turtle in high relief. *Circ.* 2.5 cm.
Small stone arrowhead.

90. Leg of stand for vase (?). Decorated with zigzags. Red steatite. 7.3 cm. high, 3.5 cm. broad. Same style of work as the early engraved stones.

91. Bit of terra-cotta. Decorated on one side with zigzags. Perhaps leg of vase-stand. Length, 5.5 cm.

92. Bit of coral. Length, 5 cm.

93. Rectangular bit of shell conglomerate. Bored in centre of side. 2.7 cm. × 2.2 cm. × 1.1 cm. Found at southeast corner of Second Temple terrace.

94. Disk of terra-cotta. Relief on both sides. Traces of glaze. Not bored. Design: figure driving a biga to right. On other side enthroned woman (?) to left holding an object, now not to be made out, in each hand. Found in the West Building. This figure may well be a representation of the statue of Hera at the Heraeum which is shown on coins in almost exactly this form. (Cf. Frazer, *Pausanias*, vol. III. p. 184, fig. 29.)





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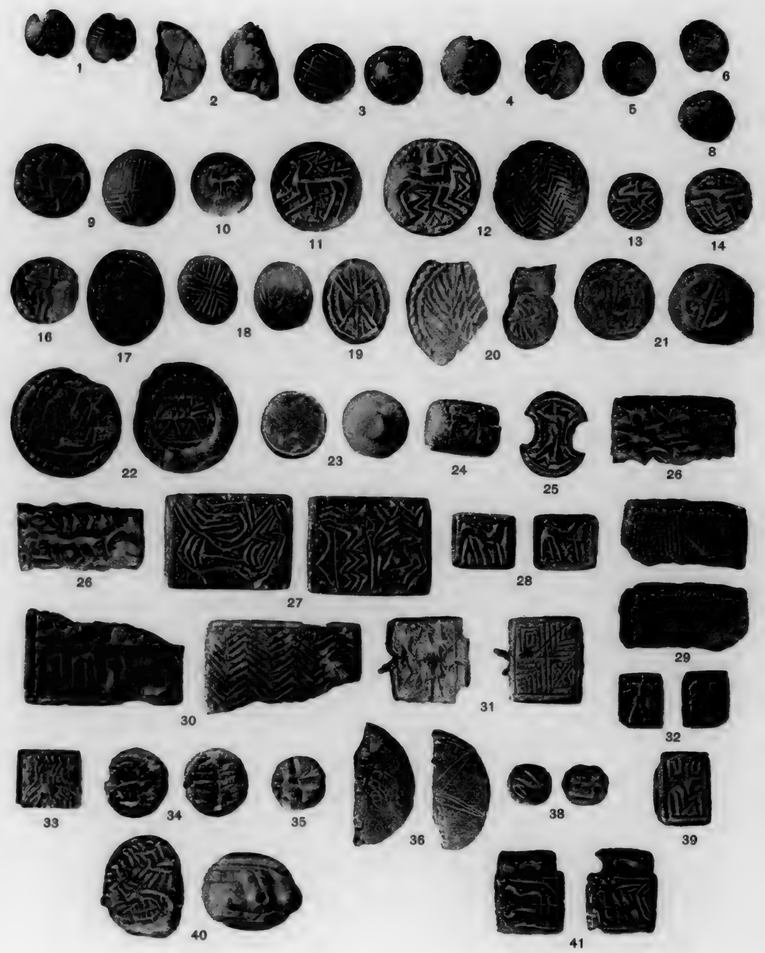
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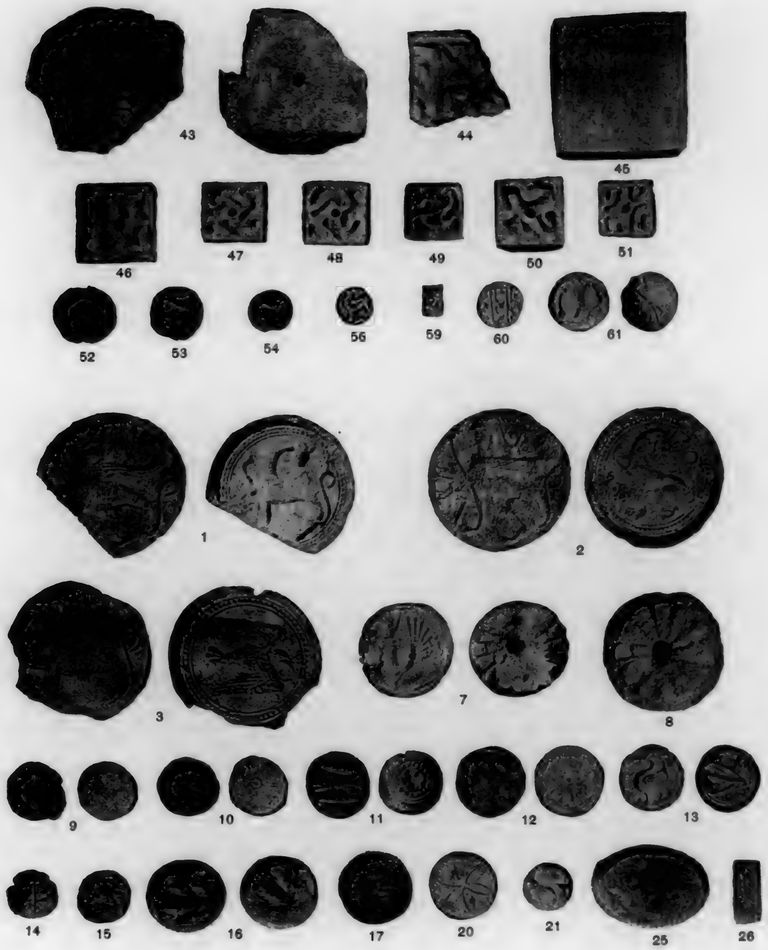
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ENGRAVED STONES: CLASSES III-V; IVORIES



IVORIES, ARTICLES OF APPAREL OR HOUSEHOLD USE, HUMAN OR ANIMAL FIGURES, MISCELLANEOUS



ENGRAVED STONES: CLASSES III-V: IVORIES



IVORIES, ARTICLES OF APPAREL OR HOUSEHOLD USE, HUMAN OR ANIMAL FIGURES, MISCELLANEOUS

COINS FROM THE ARGIVE HERAEUM

COINS FROM THE ARGIVE HERAEUM

By HERBERT FLETCHER DeCOU

The coins described in the following list were found in the excavations on the site of the Argive Heraeum, 1892–1895.

The finding-places are given so far as they are known. When they are omitted, it is to be assumed that no record exists. Details of finding-place, depth, etc., are not indicated.

Of the 46 coins of known provenience, 21 come from the West Building, 9 from the South slope, and 2 from the same neighborhood, i. e. from back of the South Building. The remainder are from various parts of the excavation. No relations between the period of the coins and the building in which they were found can be established. It may, however, be noticed that the Byzantine coins are with one exception probably from the Lower Stoa (X).

The small proportion (about $\frac{1}{15}$) of the coins belonging to the period of free Greece is somewhat remarkable, as well as the fact that for the archaic period Corinth alone is represented. However, it scarcely needs to be pointed out that the circumstances do not in this case warrant any conclusions based on negative evidence. For the later period, in particular, it would be quite futile to attempt to explain the absence of any particular pieces, and nearly so to explain their presence. Nevertheless, though the coins tell us nothing about the later history of the Heraeum, or of its condition at the period they were minted, still in the obscurity which enshrouds the latter days of the sanctuary, even these slight records of the occasional presence of human beings on the site are not without a certain interest.

CATALOGUE

A. GREECE (AUTONOMOUS AND MUNICIPAL).

Thessaly. Larisa.

PLATE CXLI.

1. From West Building. Bronze. Size, 0.018 m. *Obv.* Female head (Larisa), three-quarter face, l. Loosely floating hair confined by fillet. *Rev.* Horseman, r., clad in petasus and chiton, and holding lance. Horse prancing. Above, l. ΛΑ. Incrustation beneath horse prevents letters, if any, from showing.

Phocis.

2. From South slope. Bronze. Size, 0.0215 m. *Obv.* Three bull's heads, full-face, forming triangular pattern. *Rev.* Broad wreath within which T.

Corinthia. Corinth.

3. From South slope. Silver. Weight, 9 grammes. Size, 0.0245 m. *Obv.* Pegasos, bridled with curled wing, walking l. Beneath, ♀. *Rev.* Incuse square consisting of eight triangular compartments alternately raised and indented. Of the indentations one is flat, another repeated. Fabric rather flat.

4. Silver. Weight, 8.50 grammes. Size, 0.0245 m. *Obv.* Pegasos with curled wing trotting or flying l. Uncertain whether with bridle.

Beneath, ♀. *Rev.* Quadripartite incuse square resembling swastika. Fabric flat.

5. From South slope. Silver. Weight, 8.50 grammes. Size, 0.0225 m. *Obv.* Pegasos. Attitude uncertain. No trace of ♀. *Rev.* Quadripartite incuse square resembling swastika. Fabric flat. Hole for suspension, 0.0025 m. in diameter.

6. Bronze. Size, 0.0115 m. *Obv.* Pegasos flying, l. *Rev.* Trident. At r., in field, torch.

(*Municipal.*)

7. Bronze. Size, 0.0213 m. *Obv.* Head of Roman emperor, r. (resembles Augustus). Inscription illegible. *Rev.* Pegasos, flying, r. Uncertain whether with rider. At l., in field, COI (remainder illegible).

8. Bronze. Size, 0.0215 m. *Obv.* Head of Tiberius, l., laur. At l., ΓERE. At r., C. Remainder of inscription effaced. *Rev.* Front of hexastyle temple. Seems to be Doric with three steps. In upper l. field, LA. At r. of gable, RE▨. At r. of columns, IIVII. Beneath temple, ▨ JR for (COR).

Duovirate of L. Aerius Peregrinus and L. Furius Labeo.

9. Bronze. Size, 0.0205 m. *Obv.* Female bust (Tyche, according to *B. M. C. Corinth*, p. 71, No. 572), r., turreted. At l., ROMAL. At r., ETIMPER (for *Romae et imperio*). *Rev.* Tetrastyle temple on high base, seen from corner. In field, LCANAGRIPPAE IIVI. Beneath, COR.

L. Caninius Agrippa, Duovir.

10. Bronze. Size, 0.032 m. *Obv.* Head, beardless, and laureate, r. *Rev.* Horseman moving rapidly to r.

Much worn. Resembles *B. M. C. Corinth*, No. 580 (Domitian), but features of head of obv. are not quite the same. Attribution to Corinth doubtful.

11. Bronze. Size, 0.02 m. *Obv.* Head of Roman emperor, r. Resembles Domitian. *Rev.* Perhaps temple on Acrocorinthus as in *B. M. C. Corinth*, No. 541 (Claudius).

Patinated. Attribution uncertain.

12. Bronze. Size, 0.0245 m. *Obv.* Draped bust of youthful Marcus Aurelius, laureate, r. In l. field, MAVhLAIVS. *Rev.* Zeus, with lower part of body draped, seated on throne, l. Holds Nike in r., and rests uplifted l. on sceptre. In l. field, CLI, in r. COR.

13. From West Building. Bronze. Size, 0.026 m. *Obv.* Head of Commodus, beardless and laureate, r. In l. field, COMMIO▨. In r. field, ▨V▨AVC. *Rev.* Aphrodite standing, body in front view, face l., holding shield. Nude to groin. In l. field, CLI, in r., COR.

14. From East Building. Bronze. Size, 0.025 m. *Obv.* Head of Commodus, laureate, r. In r. field, NVS (Antoninus. Remainder of inscription illegible). *Rev.* Aphrodite upright, l., looking into shield which she holds in hands. Possible traces of Eros at her feet. In field at r., COR (remainder of inscription illegible).

15. Bronze. Size, 0.028 m. *Obv.* Head of Roman emperor, laureate, r. Features resemble those of Antoninus Pius rather than those of Commodus. At l., IMPCAESCOM. In r. field, M▨AVCCERM▨ (perhaps two illegible letters after CERM). *Rev.* Wreath of pine within which IST▨ Mi▨

Sicyonia. Sicyon.

16. From Roman Building, season of 1895. Silver. Weight, 2.50 grammes. Size, 0.015 m. *Obv.* Chimaera, l. Letters, if any, invisible owing to incrustation. *Rev.* Dove flying, l.

Achaia. Patrae (Colonia Augusta Aroë Patrensis).

17. From N. W. of West Building. Bronze. Size, 0.024 m. *Obv.* Head of Commodus, beardless, and laureate, r. At l., o▨o (remainder effaced). *Rev.* Three military standards. The central standard is surmounted by an eagle perched on a thunderbolt. Above, COL (remainder illegible).

Laconia (Roman emperors).

18. From West Building. Bronze. Size, 0.0235 m. *Obv.* Draped bust of L. Verus or M. Aurelius, laureate, r. In l. field, illegible inscription. *Rev.* Winged thunderbolt. In l. field, N▨INoMMA▨ (the first part perhaps for [*Anto*]*neinos*). In r. field, uncertain letters, i. e. LΔA.

The attribution to Laconia rests on slight ground, as the winged thunderbolt is common also in Elis; cf. *B. M. C. Peloponnesus*, p. 215.

19. Bronze. Size, 0.023 m. *Obv.* Draped bust of youthful Commodus, r. In r. field, MOΔOS. Remainder of inscription illegible.

Rev. Wreath, within which ΛΑΚϵ / ΔΑΙ / MONI

20. From South slope. Bronze. Size, 0.0205 m. *Obv.* Bearded male head, laureate, r. Inscription illegible. *Rev.* Draped female figure, standing, l. Holds in r. sistrum and in l. situla. In l. field ΛAΛ. In r. field VIΩN.

Put here because of uncertain identification of head of obverse.

Argolis. Argos.

21. Found March 22, 1894, at west end of Stoa. Bronze. Size, 0.0155 m. *Obv.* Head of Hera, r., wearing stephanos. *Rev.* Quiver. At l. in field, A / Θ / T X, at r., IΛ.

(*Municipal.*)

22. From South slope. Bronze. Size, 0.025 m. *Obv.* Male bust, r. Seems to be beardless. Perhaps Hadrian. In field at l., ▨AN. Remainder of inscription effaced. *Rev.* Nude male figure, bearded, standing, l. In r., long spear. L. rests against side. In l. field, ϵ (of Ἀργείων). Remainder of inscription effaced.

23. From West Building. Bronze. Size, 0.0252 m. *Obv.* Beardless bust, r., uncertain whether laureate. Masculine features resembling those of M. Aurelius or of Commodus. In r. field ϵINO (Antoneinos). Remainder of inscription incrusted. *Rev.* Upright female figure, r., with r. raised, and l. extended over small figure to r. Group identified with Leto and Chloris, *B. M. C. Pelop.* p. 151, No. 168 (coin of Julia Domna).

24. From back of South Building. Bronze. Size, 0.025 m. *Obv.* Head and bust of Julia Domna, r. L. field incrusted. In r. field, ▨TAΔOMNA. *Rev.* Similar to that of No. 23. In l. field, ▨PΓϵ, in r., IΩN (Ἀργείων).

25. From West Building. Bronze. Size, 0.0235 m. *Obv.* Beardless male head, l. Head bare. Features, especially the nose, like those of Caracalla. *Rev.* Draped female figure standing. Holds in either uplifted hand uncertain object, perhaps torch. In l. field, IPL, in r., ϵIΩN.

ADDENDA TO COINS OF ARGOS.

The following minute pieces, all of which are of bronze, form a collection which was kept together among the various objects brought from the Heraeum to Athens, but there is no record of provenience either for the collection as a whole or for the individual pieces. It is therefore uncertain whether they were found in the same place, or thrown together later for convenience.

That the objects are coins seems altogether probable, and that they should be attributed to Argos is likely from the fact that they come from the Heraeum, and also from the presence of A on several specimens.

A rather indefinite criterion of date is afforded by the fact that all the alphas have the cross-bar broken. To judge from such material, however, as has been available, the A has a straight cross-bar at Argos so long as it stands for the name of the town, that is to 146 B. C., when the coinage ceases, to be resumed later under Hadrian. It may be, then, that, though the broken bar was regular in the monogram of the Achaean League, we have here a hitherto unknown local coinage permitted to Argos after the suppression of the league. That the pieces continued to be issued under the emperors seems likely from the style of some of the heads.

Note. — In the following list the coins with symbols on the reverse precede those bearing letters. Within these classes the arrangement is by the style or form of head, but the minuteness and poor preservation of many of the pieces renders accuracy impossible.

26. Size, 0.01 m. *Obv.* Head of archaic style, r., beardless, and perhaps female. *Rev.* Raised ring in which ⊰⊣.

27 [wrongly given on PLATE as **29**]. Size, 0.009 m. *Obv.* Head with upper part of shoulders, r. Head seems to be radiate and beardless. *Rev.* ⁂ (perhaps flower or tree).

28. Size, 0.0095 m. *Obv.* Head and shoulders, r. Top and back covered with bristling dress like lion's skin. Head appears to be male. *Rev.* Uncertain. From one side there seem to be two advancing figures, r., from the other some monogram or symbol similar to that on No. **38**.

29. Size, 0.0095 m. *Obv.* Object resembling head with draped bust, r. In r. field, possible traces of letters, among which ϵ. *Rev.* Wreath, in which ⊰✳.

30. Size, 0.0074 m. *Obv.* Struck on one side. Only ⊣L appears, which is probably part of drapery of shoulder. *Rev.* Perhaps ϒ in wreath.

31. Size, 0.009 m. *Obv.* Head, r. *Rev.* ♀Y.

32. Size, 0.0085m. *Obv.* Head, r. *Rev.* Uncertain symbol, resembling tree, i. e. ♆.

33. Size, 0.009 m. *Obv.* Uncertain head. *Rev.* ↿ ⊀.

34. Size 0.0085 m. *Obv.* Uncertain, perhaps head. *Rev.* Worn. At side, ⊀.

35. Size, 0.009 m. *Obv.* Uncertain. Possible traces of head. *Rev.* Ψ.

36. Size, 0.0095 m. *Obv.* Possible traces of head, r. *Rev.* Perhaps symbol similar to that of No. 29.

37. Size, 0.0095 m. *Obv.* Possible trace of face, r. *Rev.* Uncertain symbol or letter, resembling Δ.

38. Size, 0.0094 m. *Obv.* Incrusted. *Rev.* ⅄ ⊀.

39. *Obv.* Uncertain. *Rev.* ⅄

40. *Obv.* Uncertain. *Rev.* Perhaps ⅈ.

41. *Obv.* Uncertain. *Rev.* Perhaps ⊹.

42. *Obv.* Uncertain. *Rev.* Similar to that of No. 41.

43. Size, 0.0105 m. *Obv.* Worn away. *Rev.* Uncertain. Perhaps ⊹.

44. Size, 0.008 m. *Obv.* Uncertain. *Rev.* Flower or tree, cf. Nos. 27, 35.

45. Size, 0.009 m. *Obv.* Uncertain. *Rev.* Shrub or flower Ψ.

46. *Obv.* Uncertain. *Rev.* Tree.

47. *Obv.* Uncertain. *Rev.* Perhaps tree.

48. *Obv.* Uncertain. *Rev.* Perhaps tree.

49. *Obv.* Uncertain. *Rev.* Perhaps tree and O.

50. Size, 0.009 m. *Obv.* Beardless head, r. *Rev.* Perhaps A.

51. Size, 0.0083 m. *Obv.* Head, wearing diadem or crown, and upper part of shoulders, r. Head apparently beardless. *Rev.* Large A. The circle under the bar of the alpha seems nearly certain.

52. Size, 0.0095 m. *Obv.* Head, uncertain whether bearded, radiate, with upper part of draped shoulders, r. *Rev.* A.

53. Size, 0.0085 m. *Obv.* Head, with draped bust, r. *Rev.* A.

54. Size, 0.008 m. *Obv.* Faint but probable traces of head and draped shoulders, r. *Rev.* A.

55. Size, 0.0092 m. *Obv.* Faint but probable traces of head, r. *Rev.* A. (Height, 0.005 m.)

56. Size, 0.0085 m. *Obv.* Incrusted. *Rev.* A.

57. Size, 0.0079. *Obv.* Worn away. *Rev.* N. For this N, cf. *B. M. C. Pelop.* p. 146, No. 124

NЄ
Nє and p. 148, No. 153 MЄI
A

58. Size, 0.0085 m. *Obv.* Uncertain. *Rev.* N.

59. Size, 0.009 m. *Obv.* Beardless head, r. *Rev.* ℵ, i. e. letter and symbols combined.

60. Size, 0.008 m. *Obv.* Perhaps head. *Rev.* ⊹.

61. Size, 0.0085 m. *Obv.* Uncertain. *Rev.* N.

62. Size, 0.0088 m. *Obv.* Uncertain. *Rev.* ⊀.

63. Size, 0.008 m. *Obv.* Uncertain. *Rev.* ↾.

64. Size, 0.008 m. *Obv.* Uncertain. *Rev.* ℵ (incrusted).

65. *Obv.* Uncertain. *Rev.* ⊼ (not very certain).

66. Half gone. Size, 0.0145 m. *Obv.* Upper part of head with diadem, r. *Rev.* Worn and incrusted.

67. Size, 0.0085. *Obv.* Beardless head and bust, r. Upper lip heavy, as though with mustache. Two locks of hair down back of neck. On breast of garment, spiral ornament. *Rev.* Uncertain.

68–102. Sizes 0.0065–0.0115. Oxidized and effaced.

103. Plain on both sides.

104. Plain on both sides. Perhaps not a coin.

Attribution uncertain.

105. From West Building. Bronze. Size, 0.0135 m. Much oxidized. Probably Greek.

106. Bronze. Size, 0.02 m. *Obv.* Head of Roman emperor, perhaps (Nero or Titus?), r. *Rev.* Effaced.

107. Found at E. end of Stoa, April 4, 1893. Bronze. Size, 0.03 m. *Obv.* Bearded head, r. Perhaps Antoninus Pius or Hadrian. Much worn. *Rev.* Draped female figure, standing l., with r. hand outstretched.

108. From West Building. Bronze. Size, 0.027 m. *Obv.* Youthful and probably male bust, r. Neck thin. *Rev.* ⊙. In field, slight but probable traces of letters.

PLATE CXLII.

109. Found in Northwest Building, 1894. Bronze. Size, 0.027 m. *Obv.* Head, r. *Rev.* ℛ.

110. From West Building. Bronze. Size, 0.028 m.

B. ROME (EMPIRE).

Antoninus Pius.

111. Bronze. Size, 0.0195 m. *Obv.* Head of Antoninus Pius, r. In l. field, ANTONINVS▨ (remainder incrusted). *Rev.* Standing draped figure. In l. field, ▨PX. In r. f., COS IIII ▨. Incrusted.

Julia Domna (?).

112. From West Building. Bronze. Size, 0.018 m. *Obv.* Draped female bust, r. Headdress of style which begins about time of Julia Domna (also Titiana and Manlia Scantilla). Inscription effaced. *Rev.* Draped female figure standing, l., with r. hand extended and with cornucopia in l. Inscription illegible except for E in r. field.

Pupienus.

113. Bronze. Size, 0.031 m. *Obv.* Draped bust of Pupienus, laureate, r. In field, IMPCAESPVPIENMAXIMVSAVC. *Rev.* Draped female figure seated in chair, l., holding in outstretched r. olive branch, in l. transverse sceptre. Inscription beginning in l. field, PAX PVBLICA. Beneath, SC. Cf. Cohen, *Médailles Imp.* vol. V. p. 17, No. 24.

Gallienus.

114. Found on South slope, west end, 1894. Bronze. Size, 0.0205 m. *Obv.* Head of Gallienus, r., radiate. Military drapery. Beginning in l. field, CALLIENVSAVC. *Rev.* Draped female figure standing l., holding in r. hand olive branch, in l. transverse sceptre. In l. field, PAX. In r. field, ⅄. Unless these characters are for AVC the coin is not included in Cohen, *op. cit.* The characters are clear.

Aurelian.

115. From South slope. Bronze. Size, 0.0223 m. *Obv.* Draped bust of Aurelian, r., radiate. Beginning in l. field, IMPAVRELIANVSAVC. *Rev.* Two upright figures, l., man in toga, r., r. draped woman, clasp hands. Beginning in l. field, CONCORDIAMILITVM. Beneath, P∗.

116. From West Building. Bronze. Size, 0.0205 m. *Obv.* Draped bust of Aurelian, r., radiate. Beginning in l. field, IMPCAVRELIANVSAVC. *Rev.* Sol upright, radiate, with mantle falling over l. shoulder, faces l., with r. arm raised, and l. hand extended and supporting perhaps a globe. In l. field a star. At his feet on either side, a captive. The l. captive has his hands bound behind his back. Beneath, S. Beginning in l. field, ORIENSAVC.

Probus.

117. Bronze. Size, 0.0235 m. Nearly half gone. *Obv.* Probus, with helmet, shield, and spear, l. Helmet radiate. Inscription, ▨P PROB VSAUC. *Rev.* Horseman (Probus) galloping, l. R. hand raised, in l. spear or sceptre. In front under raised leg of horse, possible trace of figure. Beginning in l. field, ADVEN TVSAV (remainder lost).

118. Bronze. Size, 0.024 m. *Obv.* Bust of Probus, r., radiate with military drapery. Beginning in l. field, IMPCPROBVSPFAVC. *Rev.* Draped female figure, upright, l., holding in either hand military standard. Beneath, III XXT. Beginning in l. field, FIDESM ILIT.

Carus.

119. From East Building. Bronze. Size, 0.0224 m. *Obv.* Bust of Carus, r., radiate. Military drapery. Beginning in l. field, ▨PCMAVRCARVSPFAVC. *Rev.* Female figure draped, standing l., and pointing with staff at object (globe) lying at feet. In her l. hand, long upright sceptre. Beginning in l. field, PROVIDE N TIAAVCC.

Constantius Chlorus.

120. Probably from Lower Stoa. Bronze. Size, 0.0215 m. *Obv.* Draped bust of Constantius Chlorus, r., radiate. In field, FL▨CONSTANTIVS NOB CAES. *Rev.* Draped figure, upright, facing r., receiving figure of Victory from figure with mantle over shoulder (otherwise nude), facing l. In field, CONCORDIA MILITVM. Beneath, Victory, HA

Galerius.

121. Bronze. Size, 0.021 m. *Obv.* Draped bust of Galerius, r., radiate. Beginning in l. field, CALVALMAXIMIANVSNOBCAE▨. *Rev.* Draped male figure with cloak hanging over shoulder, r., joins hands with nude figure holding long sceptre, l. Their joined hands support small draped female figure. Beginning in l. field, CONCORDIAMILITVM. Beneath, HB.

122. From West Building. Bronze. Size, 0.019 m. *Obv.* Male head, r., radiate, with features resembling those of Galerius. Inscription partly illegible, ▒XIMIANVSPLAVC. *Rev.* Two upright figures clasp hands. Their hands support small figure. In field, CONCORDI-A▒TVM. Beneath, HS.

Licinius.

123. Bronze. Size, 0.02 m. *Obv.* Bust of Licinius, r., laureate. Military drapery. Beginning in l. field, IMPLICIN▒FAVC. *Rev.* Partially draped male figure (genius), upright, l., holding some object in extended r., and in l. cornucopia. Inscription nearly effaced. In l. field, ▒IIII I . In r. field, ▒o. In inner r. field, F. In exergue, uncertain letters.

Constantius II.

124. Bronze. Size, 0.0173 m. *Obv.* Beardless draped bust of Constantius, r., with diadem. In l. field, DNCONSTAN; in r. field, TIVS PFAVC. *Rev.* Two figures fighting, one partly down, the other thrusting spear into him from above. In l. field, slight traces of inscription (FEL TEMP), in r., REPARATIO. Beneath, ΩC.

125. Bronze. Size, 0.0162 m. *Obv.* Head of Constantius, r., with diadem. In r. field, TIVSPFA▒. Remainder of inscription illegible. *Rev.* Soldier rushing to l. upon prostrate enemy. In r. field, REPARATIO (remainder of inscription illegible). In exergue, uncertain traces of letters.

126. Found back of South Building in "grave of April 13, 1894." Bronze. Size, 0.015 m. *Obv.* Head, laureate or diademed, similar to that of Constantius. Inscription illegible except for AVC in r. field. *Rev.* Wreath, within which  In exergue, four letters, of which the third is N. Cf. Cohen, *op. cit.* vol. VII. p. 492, No. 335.

Julian (called the *Apostate*).

127. Bronze. Size, 0.0165 m. *Obv.* Bust of Julian, r. Head bare and beardless. Beginning in l. field, ▒LIVIL▒ (remainder incrusted and illegible). *Rev.* Soldier upright, l., piercing with spear fallen enemy (horseman). On ground, a shield. In r. field, PARATIO (remainder illegible). In exergue, SMKA.

Gratian.

128. Bronze. Size, 0.017 m. *Obv.* Bust of Gratian, r., wearing diadem. Beginning in l. field, DNGRATIA▒PFAVC. *Rev.* Draped helmeted female figure (Roma) seated front, looking l. Holds sceptre in r., and has l. raised. In l. field VIRTVSRO; in r. field, MANORv ~ . In exergue, TES.

Attribution uncertain.

129. From West Building. Bronze. Size, 0.021 m. *Obv.* Bust of emperor, r., radiate. Uncertain whether with beard. Heavy features; thick neck. Inscription, ▒CD▒ (remainder incrusted). *Rev.* Two male figures, the l. draped, the other nude except for cloak over shoulder, clasp hands, above which, figure. Figure at r. holds in l. long sceptre. In field, CONCORDIAMILITVM. Beneath hands above exergue, Γ. In exergue, ALE.

Cf. Nos. **121 f**, but the inscription ▒C(aesar) D(omitius)▒ would seem to point rather to Aurelian, under whom coins of a similar type (Jupiter presenting globe to emperor) were struck.

130. Found in Northwest Building, 1894. Bronze. Size, 0.019 m. *Obv.* Draped bust, r. *Rev.* Standing draped figure.

131 From West Building. Much damaged. Bronze. Size, 0.014 m. *Obv.* Head, r. Illegible inscription. *Rev.* In centre, figure. About edge, letters, all illegible.

132. Much incrusted. Bronze. Size, 0.018 m. *Obv.* Head, l. Inscription illegible excepting COS▒C in r. field. Incrusted.

133. From South slope. Condition bad. Bronze. Size, 0.02 m. *Obv.* Head, r. *Rev.* Draped standing figure, l.

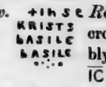
C. ROME (EASTERN EMPIRE).

Arcadius.

134. From West Building. Bronze. Size, 0.0143 m. *Obv.* Draped bust of Arcadius, r., wearing diadem. In field DNARCADIVS PFAVC. *Rev.* Draped male figure upright, moving to l., but with head turned to r., has r. hand raised, and with l. drags captive. In l. field, SA▒RE▒; in r. field, PVBLICAE. In inner l. field, ☧. In exergue, SMKΔ.

John Zimisces (A. D. 969–976).

135. Probably from Lower Stoa. Perforated. Bronze. Size, 0.0345 m.

Obv.  *Rev.* Bust of Christ in halo and cross facing, and holding probably book of gospel. At side, $\overline{IC}$ – XC. In l. field, + EMMA.

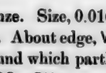
136. Probably from Lower Stoa. Perforated and much worn. Bronze. Size, 0.0282 m.

Obv.  *Rev.* Bust of Christ with halo and cross facing, and probably holding book of gospel.

137. From East Building. Bronze. Size, 0.028 m.

Obv.  *Rev.* Bust of Christ with halo and diadem facing, and holding gospel. Struck twice, the second time to l. of first. To second impression belong $\overline{IC}$ in l. field and + EMMA. To first impression belong in r. field $\overline{XC}$ and NOVN.

138. Probably from Lower Stoa. Perforated. Condition poor. Bronze. Size, 0.0255 m.

Obv.  *Rev.* Head and bust of Christ facing. Details effaced.

Attribution uncertain.

139. Probably from Lower Stoa. Perforated. Bronze. Size, 0.025 m. *Obv.* Indistinct male figure, perhaps laureate. Above head there seems to be a small +. *Rev.* ⁂. At l., two or three balls ⁝

If on this coin the head is that of Christ, the words "*Obv.*" and "*Rev.*" are to change places.

D. VENICE.

140. Bronze. Size, 0.016 m. *Obv.* Head and mane of lion. About edge, VENETI · + · S · Mᴀ' *Rev.* ✠ around which partly effaced inscription, ▒ARBATICO · DV+ ·

141. Found in West Building, April 25, 1893. Bronze. Size, 0.028 m. *Obv.* Head and mane of lion. About edge, ✱ S · MARC · VEN · In exergue, ✱ II ✱

Rev. ISOLE
E T
ARMATA

Above and beneath, rosette.

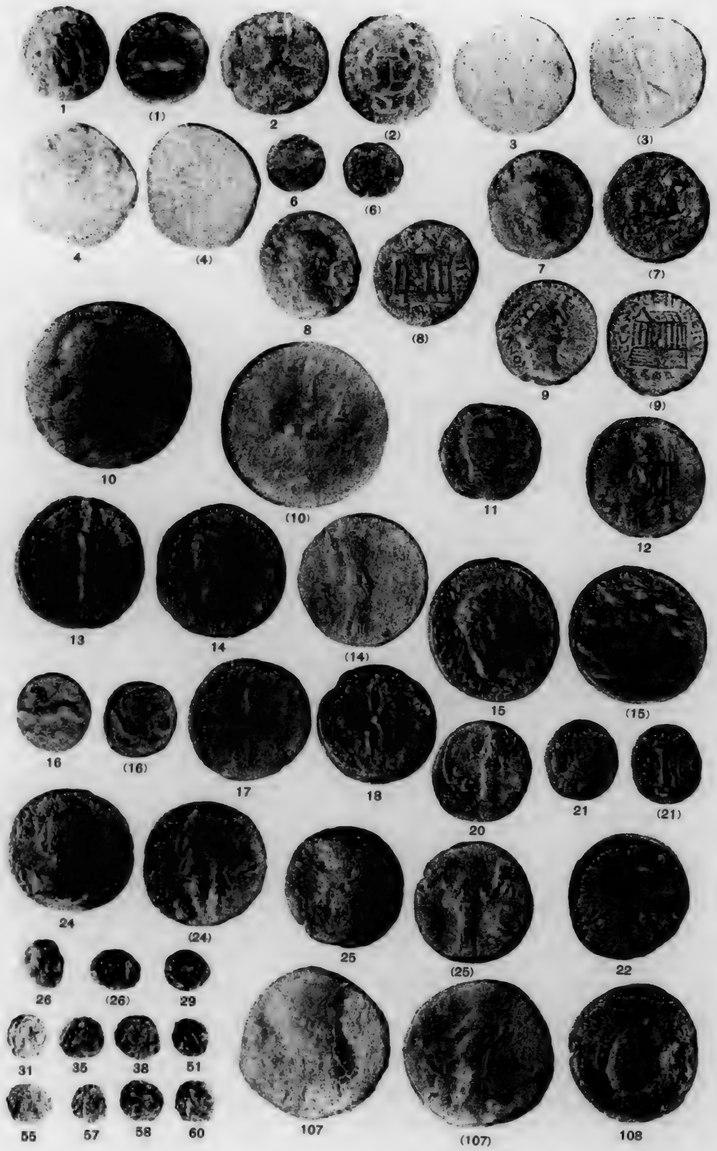
Corfu, Cephalonia, Zante.

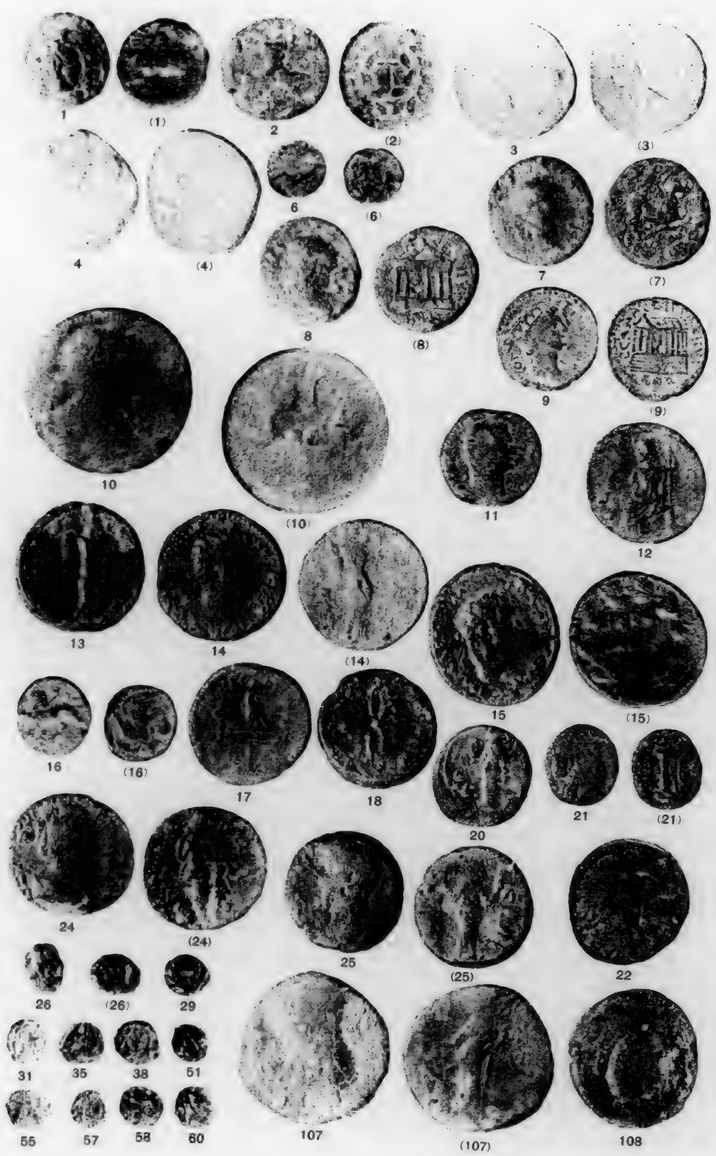
142. Bronze. Size, 0.0263 m. *Obv.* Lion's head with mane. About edge, ✱ ▒ARCVS · VE ✱ In exergue, ✱ I▒

Rev. CORFV
CEFAL·
ZANTE

E. UNCERTAIN.

143–155. Numbers 143–148 from West Building. Numbers 143–145 found in 1894. Much worn or oxidized or both. Bronze. Sizes, 0.0135–0.0212 m.


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COINS.—MAINLY ROMAN

THE EGYPTIAN, OR GRAECO-EGYPTIAN, OBJECTS FROM THE ARGIVE HERAEUM



COINS.—MAINLY ROMAN

THE EGYPTIAN, OR GRAECO-EGYPTIAN, OBJECTS FROM THE ARGIVE HERAEUM

EGYPTIAN, OR GRAECO-EGYPTIAN, OBJECTS FROM THE ARGIVE HERAEUM [1]

By ALBERT MORTON LYTHGOE

The intercourse between Egypt and her neighbors on the north, which we should expect to trace, first to the nearer islands and then on to Greece itself, has been proved by recent evidence to have begun at least as early as the XVIth Egyptian dynasty. This earliest fixed date lies in the finding by Mr. Arthur Evans, in the palace of Cnossos, of the lid of an alabaster vase inscribed with the names of Khyan, one of a group of kings who have now been proved beyond all doubt to belong to the intermediate period between the XIIth and XVIIIth dynasties, and to be in all probability Hyksos.[2]

The evidence of an earlier intercourse than this between these two centres of civilization is yet problematical, in the absence of any earlier material to which an absolutely certain dating can be given. Types of pottery and other objects, similar to the earlier Aegean types though not identical with them, have been found by Flinders Petrie in the XIIth dynasty town site of Kahun, and in the royal tombs and old temple of the Ist dynasty at Abydos;[3] but in these cases the types themselves lack identification as known Aegean types, and the evidence of their occurrence is not sufficiently conclusive to warrant ascribing them to the periods in apparent relation to which they were found. Until known material of this character comes to hand, which can be dated firmly by its occurrence, under undisturbed conditions, with fixed Egyptian types, we can hardly go beyond this earliest date which Crete has now given us.

On the other hand, the evidence of the intercourse between Greece and Egypt from that date on is conclusive. Beginning with the dated objects of Egyptian origin found in the Mycenaean sites of Greece and the islands, which prove that period in Greek civilization to have been contemporary, in part at least, with the XVIIIth dynasty, the connection appears to have been interrupted during the disturbed period of the XXIst to the XXVth dynasties, and then finally, with the influx of Greeks into Egypt in the XXVIth dynasty, trade and intercourse between the two countries becomes so constant that they both furnish, from that time on, abundant evidence of their common relation. It is of this evidence, of the period known as the Late New Empire, — the XXVIth and succeeding dynasties previous to the conquest by Alexander, — that the Egyptian objects from the Heraeum are a part, and objects of identically the same character have been found also at Eleusis,[4] Aegina,[5] and Camirus,[6] and in Egypt itself at Naukratis.[7] In fact, it is this Greek colony of Naukratis, which rose to great importance under the privileges granted it by Amasis (569–526 B. C.), and which, as the capital of the Egyptian Greeks,

[1] I am indebted to Mr. P. Kabbadias, Director-General of Antiquities, for permission to photograph the Egyptian objects from Aegina (now in the Museum at Athens), for comparison with these from the Heraeum (PLATE CXLIV.).

[2] Cf. Griffith, *Arch. Report*, 1901, p. 37.

[3] The most recent discussion of this material by Professor Petrie is in *Methods and Aims in Archaeology*, London, 1904.

[4] Cf. Philios, *Ἐφ. Ἀρχ.*, 1889, 171 ff.

[5] Cf. Staës, *Ἐφ. Ἀρχ.*, 1895, 193 ff. and 201–255.

[6] Cf. Murray, *Cat. of Gems in Brit. Mus.* pp. 46–58.

[7] Cf. *Naukratis*, parts I. and II., by W. M. Flinders Petrie, E. A. Gardner, and others.

was visited by Herodotus nearly a century later, that we now see to have been the original source of all this evidence, and to it the origin of the Egyptian objects, both from the Heraeum and the other sites mentioned, is to be traced.

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There not only did the Greeks erect temples and statues to Greek divinities and carry on the manufacture of Greek pottery, figurines, and other objects of the same types and in the same manner as in Greece itself, but they became skilled in the arts of Egypt, and learned to reproduce Egyptian types of deities, Egyptian forms of decoration, and Egyptian hieroglyphics. In some cases they copied the hieroglyphics correctly, and in others their errors show clearly they had little knowledge of the language. They learned, moreover, to work in the materials in common use among the Egyptians, and we find in greatest number scarabs, vases, and figurines of glazed porcelain. On the scarabs they not only reproduced Egyptian inscriptions and designs, but they ornamented them with scenes reminiscent of their own Greek art, as the two running stags, and the stag pursued by a hound (PLATE CXLIII. 32 and 33), while in the case of the porcelain figures they both imitated well-known Egyptian subjects — such as the animals sacred to the gods, as the cat (PLATE CXLIII. 48) and the rabbit (PLATE CXLIV. 54), and the Egyptian divinities themselves, as Bes (PLATE CXLIII. 47) — and also introduced their own Apollo (PLATES CXLIII. 51 and CXLIV. 53), here represented as playing on the double pipe.[3]

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[1] Cf. *Naukratis*, I. pls. xxxvii. and xxxviii.
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Apart from these Egyptian, or Graeco-Egyptian, objects from the Heraeum, which are thus to be grouped in a single class of obviously the same date and origin, there are in addition two glass scarabeoids (PLATE CXLIII. 40 and 41) which, while seemingly Egyptian in character, need special consideration. They are clearly Egyptian in form and partly in device, but in style and treatment they belong to a class of scarabs and scarabeoids which show Asiatic influence, and which have been identified in general as of Phoenician origin. The extent to which the Phoenicians borrowed Egyptian forms and imitated Egyptian designs both in metal working and in the engraving of gems is attested by the considerable number of objects known in which this fact can be easily identified.[2] Scarabs and scarabeoids of this class are generally found to bear a design either purely Egyptian or adopted from the Egyptian, but in rare cases they actually occur with an inscription in Phoenician characters.[3]

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CATALOGUE

PLATE CXLIII. (*scale* 1 : 1).

1. Inscribed *Amen Ra neb* = 'Amen Ra, the Lord.' Here, and also in Nos. **2**, **3**, and **4**, the maker has shown his unfamiliarity with the signs in having mistaken this sign of the ostrich-feather, the symbol of the goddess Ma'at, or Truth (cf. No. **13**, where it occurs properly) for the reedleaf, in the name of the god Amen (cf. No. **5**). For the feather, see Griffith, *Beni Hasan*, part III. pl. v. 72; and for the reedleaf, Griffith, *Hieroglyphs*, pl. vii. 106.

Blue-glazed frit.

2. Same inscription as No. **1**, and same error in the reedleaf sign. In addition, the *men* sign is very badly formed, and in other cases, as No. **4**, has become quite shapeless.

Blue-glazed frit.

3. Same inscription.

Blue-glazed frit.

4. Same inscription. Cf. No. **2**.

Blue-glazed frit.

5. Same inscription. Here the reedleaf is correctly represented.

Frit, the glaze completely gone.

6. Same inscription. Characters more carefully rendered than usual.

Blue-glazed frit.

7. Probably to be read *Amen Ra neb ma'at* = 'Amen Ra, Lord of Truth.' The middle signs are badly moulded and are fused together.

Blue-glazed frit.

8. Probably to be read as No. **7**. The last sign certainly seems to be the ostrich-feather.

Frit, with traces of blue glaze.

9. *Ankh ma'at* = 'Living is Truth.'

Blue-glazed frit.

10. *Ra neb ma'at* = 'Ra, Lord of Truth,' followed by the uraeus, the protector of the sun-god.

Frit, glaze completely gone.

11. Probably to be read as No. **10**. The third sign seems to be a misshapen ostrich-feather. Lastly, an unintelligible sign, possibly an attempt at an *ankh* sign.

Blue-glazed frit.

12. *Ra nefer neb ma'at* = 'The good Ra, Lord of Truth.'

Frit, no traces of glaze.

13. *Ra neb ma'at* = 'Ra, Lord of Truth.'

Blue-glazed frit.

14. *Ma'at nefer* = 'Truth is beautiful.' This sign which we have read as *nefer* must be the lute-sign, as in No. **12**, but crudely represented. (Cf. Griffith, *Hieroglyphs*, pl. ix. 164.)

Blue-glazed frit.

15. Probably same inscription as No. **13**.

Frit, badly worn and glaze gone.

16. Same inscription as No. **13**.

Blue-glazed frit.

17. Inscribed with the prenomen of Thothmes III., *Men kheper Ra* = 'Established (i. e. enduring) is the being of Ra.' Outside the cartouche are the red crown of Lower Egypt (*dšrt*, cf. Griffith, *Hieroglyphs*, p. 56), and the mallet sign (*ḥn*, cf. Griffith, *op. cit.* pl. vii. 104), both symbols of royalty.

Of steatite, with traces of a deep yellow glaze. The whole style of the scarab, and especially the cutting of the back, would assign it to the XXVIth dynasty, or the period immediately following.

18. In upper register: *stni-biti* = 'King of Upper and Lower Egypt.' Below in the cartouche: At the top, the sun's disk, *Ra*. At the bottom, the beetle sign, *kheper;* and between the two an indistinct sign, which seems in all probability to be the *men*, and which would thus give us again the prenomen of Thothmes III., as in No. **17**. On either side of the cartouche is an uraeus, the protector of royalty.

Of frit, the glazing completely gone; and in style, of same period as No. **17**.

19. Too badly worn to be read with any degree of certainty. At lower right side is a cartouche, of which the upper sign is certainly the sun's disk, and the lower sign possibly the *kheper*. The intermediate sign cannot be distinguished, but it is possible that we may have again the name of Thothmes III.

Scarabeoid, of soft paste or frit, bordered by a moulded band ornamented around the side with a twisted rope pattern. (Cf. Petrie, *Decorative Art*, fig. 169.)

20. Above, the barque of Ra, surmounted by the sun's disk. Beneath, the figure of a hawk, symbolic of the sun-god.

Of a deep blue-colored frit; glaze gone.

21. Intended to read *Amen Ra*, but in *Amen* the sign of the eagle is incorrectly used, instead of that of the reedleaf.

Of a blue frit, like No. **20**, and glaze also gone.

22. The figure of a sphinx, recumbent, the incarnation of Ra, the sun-god, as the protector of mankind. (Cf. Wiedemann, *Religion*, p. 197.) Above, the sun's disk; and in front, the feather, symbol of divinity.

Blue-glazed frit.

23. Above, the barque of Ra, surmounted by the sun's disk. Below, the uraeus, protector of the god.

Frit, glaze gone.

24. At the right the crooked sceptre, which as a word-sign has the value *ḥḳ* = 'ruler, prince;' then the uraeus, symbol of royalty; followed by a third sign, the form and significance of which cannot be determined.

Blue-glazed frit.

25. Human-headed sphinx, standing, crowned with the white crown of Upper Egypt, with uraeus at front, and represented bearded. Same significance as in No. **22**, — the incarnation of Ra, the sun-god. Above, the sun's disk. Before the sphinx, the crooked sceptre as in No. **24**. (Cf. Griffith, *Hieroglyphs*, fig. 39.)

Blue-glazed frit.

26. Above, the sun's disk. Below, seemingly a squatting figure, as of the god himself (Ra).

Frit, with traces of a yellow glaze.

27. Standing figure, representing some god or royal personage. In the right hand a uraeus, in the left a sceptre, and evidently crowned with the white crown of Upper Egypt.

Frit, all traces of glazing gone.

28. Representation of some animal of long and slender body, and with long snout, — perhaps the jackal. (Cf. Davies, *Mastaba of Ptahhetep*, part I. fig. 63.)

Frit, glaze gone.

29. Amen Ra before a seated god or king. Amen Ra is represented as hawk-headed, crowned with the crown of Upper Egypt and the double plume, and in his left hand the *was* sceptre. (Cf. Griffith, *Hieroglyphs*, p. 59.) The seated figure is represented with the same sceptre, and is bearded.

Blue-glazed frit.

30. The *ankh* sign, or sign of life, with two uraei intertwined, — a design which occurs in Egypt as early as the VIth dynasty. (Cf. Petrie, *Methods and Aims in Archaeology*, fig. 62.)

Frit, glaze gone.

31. Representation of the griffin, one of the fantastic beasts which inhabited the desert, in the belief of the Egyptians. (Cf. Maspero, *Dawn of Civilization*, p. 88.)

Frit, glaze gone.

32. Two running ibexes. (For the Egyptian ibex, cf. Newberry, *Beni Hasan*, part I. pl. xxviii.)

Pottery, pale blue-gray color, surface glaze gone.

33. Ibex pursued by a hound. (For similar representations in Egyptian art, cf. Newberry, *Beni Hasan*, part I. pl. xxx., and Davies, *Mastaba of Ptahhetep*, part I. pls. xxii. and xxv.)

Blue-glazed pottery.

34. Duck rising from a marsh or swamp. (For the duck, cf. Griffith, *Beni Hasan*, part III. pl. ii. figs. 1 and 8.) Behind is a tall-stemmed plant tipped with a clump of leaves, and before the duck is the so-called sedge, a plant identified with the South, or Upper Egypt. (Cf. Borchardt, *Pflanzensäule*, Abb. 35.) The scarab is broken at this end and another character cannot be determined.

Porcelain, of a dark brownish color, as if subjected at some later period to the action of fire. Glaze gone.

35. In upper register a recumbent sphinx, with tail raised. Over the animal the sun's disk. (Cf. No. **22**.) Below, a hawk, symbolic of the sun-god, is represented in a papyrus-marsh, with a clump of three papyrus stems behind. (Cf. Griffith, *Beni Hasan*, part III. pl. iii. fig. 16.)

Blue-glazed frit.

36. Representation of some animal.

Frit, badly worn, glaze gone.

37. So worn that the design is undeterminable.

Frit, glaze gone.

38. The winged uraeus protecting the sun's disk.

Frit, glaze gone.

39. Two winged uraei, protecting a seated divinity, who appears to have the sun's disk on his head and to be holding a sceptre.

Frit, traces of greenish blue glaze.

40. Above, the hawk-headed Ra, winged, and crowned with the double crown. Below, a scarabaeus with wings outspread, — an emblem of the sun-god.

Scarabeoid, of blue glass.

Although the subject of this design is Egyptian, yet it is non-Egyptian in style and character, and is certainly of a class of Phoenician scarabs of which a considerable number are

known. (Cf. Murray, *Cat. of Gems in Brit. Mus.* pl. B, 146.)

41. Apparently, a conventionalized design, of which the centre is a scarabaeus with outspread wings.



Fig. 2. — Scarabeoid of Asiatic and probably Phoenician origin. Found at Eleusis.

Scarabeoid, of yellow glass.

Of same style and undoubtedly of same origin as **40**; cf. Fig. 2, a similar scarabeoid of greenish blue glass found at Eleusis (Athens Mus. 10960).

42. Papyrus-capital amulet. As a hieroglyphic word-sign the papyrus stem has the value *wad*=green, flourishing (cf. Borchardt, *Pflanzensäule*, p. 26, and Griffith, *Hieroglyphs*, fig. 125).

Here, as an amulet, with its suggestion of use as a column, it seems to have borne the idea of solidity, strength, and hence well-being.

Blue-glazed porcelain. Pierced, at the base of the die, for suspension.

43. Pendant or amulet, of unknown meaning.

Of crystal. Similar pendants occur in Egypt at nearly every period, from the XIIth dynasty on.

44. Like No. **43**, but of blue-glazed porcelain, and pierced perpendicularly in the base by a small square hole, as if for use as a knob.

45. Head of a male figure, of blue-glazed porcelain. The modeling of the head, with its thick, massive wig, is characteristically Egyptian.

46. Head of a male figure, evidently of the "Apollo" type. See below, No. **51**.

Blue-glazed porcelain.

47. Figure of the god Bes. Represented in a characteristic attitude, as a bearded dwarf, with long ears, bowed legs, and arms resting on thighs. He is sometimes represented also with protruding tongue, and dressed in the skin of an animal, with tail hanging down at the back. (Cf. Wiedemann, *Religion*, pp. 159 ff.)

This figure originally had a crown of feathers, which has been broken off.

Of blue-glazed porcelain.

There is nothing to prove the generally expressed idea that this god was one of foreign origin brought into Egypt at a later period, perhaps at the beginning of the New Empire. Amulets in the form of this god are now known as early as the Vth or VIth dynasty, and his worship certainly began as early as that. In the period of the Late New Empire (to which our figure belongs) these representations of him became extremely common, and they have been found at nearly all the Greek sites to which Egyptian influence spread. (Cf. also the one from Aegina, Plate CXLIV. 10.)

48. Seated figure of a cat.

White-glazed porcelain.

The cat figures in Egyptian art as the sacred animal of the goddess Bast, the centre of whose cult was at Bubastis, in the Delta. Innumerable representations of this animal, in bronze as well as in porcelain, have been found there, and from its proximity to Naukratis it is easy to account for the manner in which these figures have found their way to Greek sites. A similar figure to this was found at Aegina (cf. Plate CXLIV. 9).

49. Figure of Ptah, in the form Ptah-Seker-Osiris, a composite deity, who figures principally as a god of the dead. As such he is represented as here, as a squatty figure crowned with feathers, and with bowed legs and hands on his hips.

Blue-glazed porcelain.

50. Figure of a deity (?), bearded and with the heavy wig falling down before the shoulders. Originally crowned with some attribute, now missing.

Blue-glazed porcelain.

51. Figure of the "Apollo" type, representing the god as playing on the double pipe.

Blue-glazed porcelain.

This motive, of playing on the double pipe, occurs in Egyptian art in mural paintings of the XVIIIth dynasty and onwards, in scenes of feasting and dancing (cf. Erman, *Life in Ancient Egypt*, p. 250), but is unknown in the case of faïence or bronze figures. Figures of this type are solely the product of Graeco-Egyptian art, and were first identified at Naukratis (see above). Another example was also found here at the Heraeum. (Plate CXLIV. 53.)

52. Figure similar in type to No. **51**, which may possibly represent one of the other types of Apollo identified at Naukratis. (Cf. *Naukratis*, I. § 17.)

Blue-glazed porcelain.

The figure is represented with the heavy wig, broadening out over the ears and falling behind them on the shoulders. In feature this type has nothing in common with Egyptian art of the period, the long face narrowing down at the chin and the eyes protruding from their sockets being strongly characteristic, rather, of contemporary Greek art. These same characteristics appear also in Nos. **46** and **51**, and they are all undoubtedly due to one and the same influence. Plate CXLIV. (*scale* 5 : 6 [left], 1 : 1 [right]).

53. Same motive as in No. **51**. Apollo playing on the double pipe.

Blue-glazed porcelain.

54. Figure of a hare, recumbent.

Blue-glazed porcelain.

As a hieroglyphic word-sign, the hare has the value *wen*='to be.' It is the common desert hare of Egypt, and is generally represented, as here, with greatly exaggerated ears (cf. Griffith, *Hieroglyphs*, pl. i. 2). This animal was sacred to Osiris Wen-nefer, and votive figures and amulets in this form are very common.

55. Fragment: form undeterminable.

Blue-glazed porcelain.

56. Fragment of a porcelain vase, blue-glazed.

The ornamentation consists of a double band moulded in relief; the upper, of perpendicular parallel lines between two horizontal ones, and the lower, of a series of rectangles, each with a circle at the centre, separated by two perpendicular lines.

Both of these forms are well-known Egyptian ones, and occur regularly as border patterns in wall-decoration and the like. (Cf. Petrie, *Decorative Art*, figs. 186 and 194.)

57. Fragment of a vase, with decoration similar to the upper band on No. **56**.

Blue-glazed porcelain.

58. Porcelain whorl, blue-glazed. In shape, like two truncated cones base to base, and with a hole through centre perpendicularly. (Fig. 3.) Decoration, on both sides, of a rosette. This form of ornament, the rosette, is one of the commonest in Egyptian art at all periods, but it is often so conventionalized that it is difficult to determine its derivation. In this form, with broad, round-ended petals, it has been identified by Petrie (*Decorative Art*, pp. 56–58) as the daisy, and by Borchardt (*Pflanzensäule*, p. 4, note 1) as the *chrysanthemum coronarium*. Among the objects from Aegina, however, is the cover of a kohl pot in blue-glazed porcelain (Plate CXLIV. 7), which, with its centre in relief, certainly represents the daisy; and it would seem, from the more common occurrence of the daisy, that that would more likely have been taken as a motive.

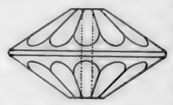


Fig. 3. — Porcelain Whorl.

It also occurs with petals with pointed ends, as, for example, on another whorl from the Heraeum (Plate CXLIV. 59), but in such cases it is certainly derived from another source.

One of the earliest occurrences of the rosette is the eight-petaled form on the headband of the statue of Nefert, of the IVth dynasty, from Medum, now in the Cairo Museum, and we find it employed afterwards in innumerable ways, — not only as an ornament on sculpture, but, in combination with other patterns, as a border-pattern in wall-painting (cf. Petrie, *op. cit.* figs. 125, 126), as a motive in ceiling decoration (cf. Wilkinson, *Ancient Egyptians*, 2d ed. I. pl. viii.), in the glazed-porcelain tile decoration of Tell el-Amarna (cf. Petrie, *Tell el-Amarna*, pls. xiii. ff.), and the similar decoration of the palace of Rameses III. at Tell el-Yahudieh (cf. Hayter-Lewis, in *Trans. Soc. Bibl. Arch.* vol. vii.). It likewise occurs as a pattern in the cloth and leather coverings of royal thrones (cf. Wilkinson, *op. cit.* I. Frontispiece), in bead-work (cf. Garstang, *El Arabah*, pl. xxii.), and in decorative metal-work, as in the silver bowls from Mendes, now in the Cairo Museum (cf. Maspero, *Manual Egypt. Arch.* figs. 285 and 286).

59. Porcelain whorl, blue-glazed, of same shape as No. **58**. Here the decoration consists of a flower with petals sharply pointed, — a form which occurs constantly and has been identified with certainty by Borchardt as derived from the *nymphaea caerulea* (cf. *Pflanzensäule*, p. 12).

60. Fragment of a group of two figures, in blue-glazed porcelain. The right figure is male, and the left female, with breasts clearly pronounced. They are represented side by side, a position which occurs so frequently in Egyptian sculpture, both in standing and seated groups of husband and wife. Each has the heavy wig, — which here shows traces of having been originally colored black, — falling down behind the ears upon the shoulders, while on the right breast of the female figure are two black dots, as if a necklace had been represented.

61. Base and lower part of a half-kneeling figure, of blue-glazed porcelain.

Represented kneeling on the left knee, with right knee raised and foot squarely on base. It is the position of one about to rise, or to upraise an object, from the ground, and occurs in figures

known. (Cf. Murray, *Cat. of Gems in Brit. Mus.* pl. B, 146.)

41. Apparently, a conventionalized design, of which the centre is a scarabaeus with outspread wings.



Fig. 2. — Scarabeoid of Asiatic and probably Phoenician. origin.

Found at Eleusis.

Scarabeoid, of yellow glass.

Of same style and undoubtedly of same origin as **40**; cf. Fig. 2, a similar scarabeoid of greenish blue glass found at Eleusis (Athens Mus. 10960).

42. Papyrus-capital amulet. As a hieroglyphic word-sign the papyrus stem has the value *wad* = green, flourishing (cf. Borchardt, *Pflanzensäule*, p. 26, and Griffith, *Hieroglyphs*, fig. 125).

Here, as an amulet, with its suggestion of use as a column, it seems to have borne the idea of solidity, strength, and hence well-being.

Blue-glazed porcelain. Pierced, at the base of the die, for suspension.

43. Pendant or amulet, of unknown meaning.

Of crystal. Similar pendants occur in Egypt at nearly every period, from the XIIth dynasty on.

44. Like No. **43**, but of blue-glazed porcelain, and pierced perpendicularly in the base by a small square hole, as if for use as a knob.

45. Head of a male figure, of blue-glazed porcelain. The modeling of the head, with its thick, massive wig, is characteristically Egyptian.

46. Head of a male figure, evidently of the "Apollo" type. See below, No. **51**.

Blue-glazed porcelain.

47. Figure of the god Bes. Represented in a characteristic attitude, as a bearded dwarf, with long ears, bowed legs, and arms resting on thighs. He is sometimes represented also with protruding tongue, and dressed in the skin of an animal, with tail hanging down at the back. (Cf. Wiedemann, *Religion*, pp. 159 ff.)

This figure originally had a crown of feathers, which has been broken off.

Of blue-glazed porcelain.

There is nothing to prove the generally expressed idea that this god was one of foreign origin brought into Egypt at a later period, perhaps at the beginning of the New Empire. Amulets in the form of this god are now known as early as the Vth or VIth dynasty, and his worship certainly began as early as that. In the period of the Late New Empire (to which our figure belongs) these representations of him became extremely common, and they have been found at nearly all the Greek sites to which Egyptian influence spread. (Cf. also the one from Aegina, Plate CXLIV. 10.)

48. Seated figure of a cat.

White-glazed porcelain.

The cat figures in Egyptian art as the sacred animal of the goddess Bast, the centre of whose cult was at Bubastis, in the Delta. Innumerable representations of this animal, in bronze as well as in porcelain, have been found there, and from its proximity to Naukratis it is easy to account for the manner in which these figures have found their way to Greek sites. A similar figure to this was found at Aegina (cf. Plate CXLIV. 9).

49. Figure of Ptah, in the form Ptah-Seker-Osiris, a composite deity, who figures principally as a god of the dead. As such he is represented as here, as a squatty figure crowned with feathers, and with bowed legs and hands on his hips.

Blue-glazed porcelain.

50. Figure of a deity (?), bearded and with the heavy wig falling down before the shoulders. Originally crowned with some attribute, now missing.

Blue-glazed porcelain.

51. Figure of the "Apollo" type, representing the god as playing on the double pipe.

Blue-glazed porcelain.

This motive, of playing on the double pipe, occurs in Egyptian art in mural paintings of the XVIIIth dynasty and onwards, in scenes of feasting and dancing (cf. Erman, *Life in Ancient Egypt*, p. 250), but is unknown in the case of faïence or bronze figures. Figures of this type are solely the product of Graeco-Egyptian art, and were first identified at Naukratis (see above). Another example was also found here at the Heraeum. (Plate CXLIV. 53.)

52. Figure similar in type to No. **51**, which may possibly represent one of the other types of Apollo identified at Naukratis. (Cf. *Naukratis*, I. § 17.)

Blue-glazed porcelain.

The figure is represented with the heavy wig, broadening out over the ears and falling behind them on the shoulders. In feature this type has nothing in common with Egyptian art of the period, the long face narrowing down at the chin and the eyes protruding from their sockets being strongly characteristic, rather, of contemporary Greek art. These same characteristics appear also in Nos. **46** and **51**, and they are all undoubtedly due to one and the same influence.

Plate CXLIV. (*scale* 5 : 6 [left], 1 : 1 [right]).

53. Same motive as in No. **51**. Apollo playing on the double pipe.

Blue-glazed porcelain.

54. Figure of a hare, recumbent.

Blue-glazed porcelain.

As a hieroglyphic word-sign, the hare has the value *wen* = 'to be.' It is the common desert hare of Egypt, and is generally represented, as here, with greatly exaggerated ears (cf. Griffith, *Hieroglyphs*, pl. i. 2). This animal was sacred to Osiris Wen-nefer, and votive figures and amulets in this form are very common.

55. Fragment: form undeterminable.

Blue-glazed porcelain.

56. Fragment of a porcelain vase, blue-glazed.

The ornamentation consists of a double band moulded in relief: the upper, of perpendicular parallel lines between two horizontal ones, and the lower, of a series of rectangles, each with a circle at the centre, separated by two perpendicular lines.

Both of these forms are well-known Egyptian ones, and occur regularly as border patterns in wall-decoration and the like. (Cf. Petrie, *Decorative Art*, figs. 186 and 194.)

57. Fragment of a vase, with decoration similar to the upper band on No. **56**.

Blue-glazed porcelain.

58. Porcelain whorl, blue-glazed. In shape, like two truncated cones base to base, and with a hole through centre perpendicularly. (Fig. 3.) Decoration, on both sides, of a rosette. This form of ornament, the rosette, is one of the commonest in Egyptian art at all periods, but it is often so conventionalized that it is difficult to determine its derivation. In this form, with broad, round-ended petals, it has been identified by Petrie (*Decorative Art*, pp. 56–58) as the daisy, and by Borchardt (*Pflanzensäule*, p. 4, note 1) as the *chrysanthemum coronarium*. Among the objects from Aegina, however, is the cover of a kohl pot in blue-glazed porcelain (Plate CXLIV. 7), which, with its centre in relief, certainly represents the daisy; and it would seem, from the more common occurrence of the daisy, that that would more likely have been taken as a motive.

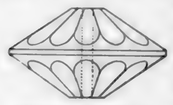


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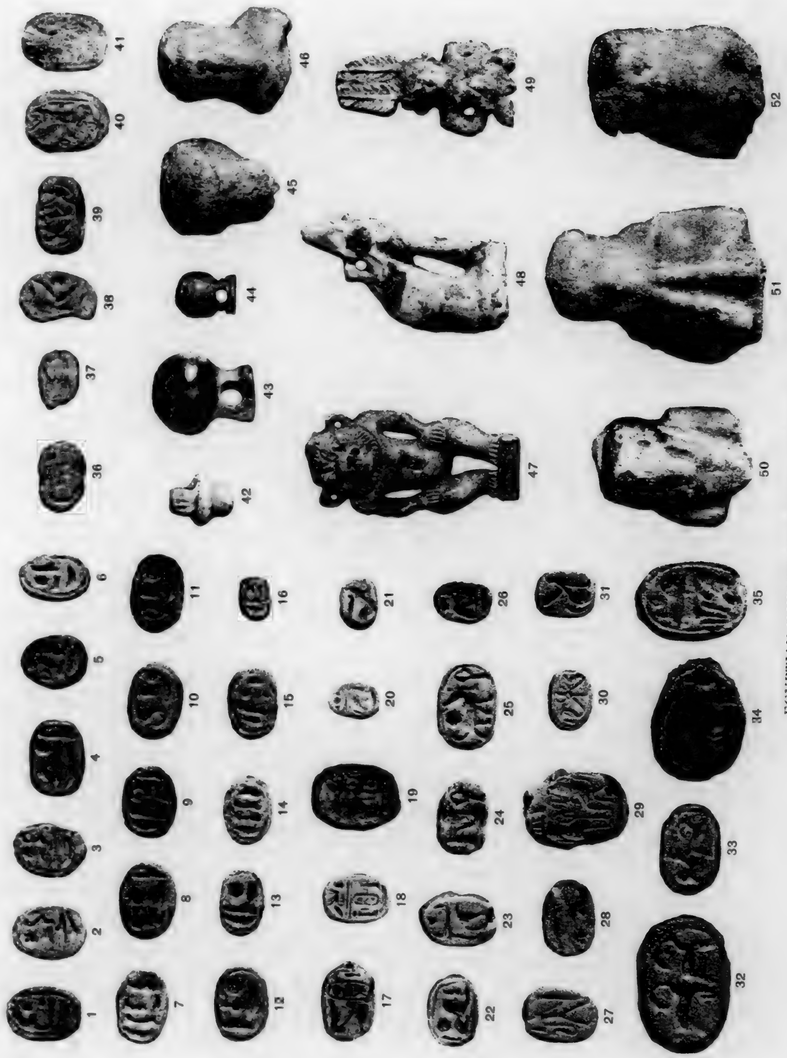
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61. Base and lower part of a half-kneeling figure, of blue-glazed porcelain.

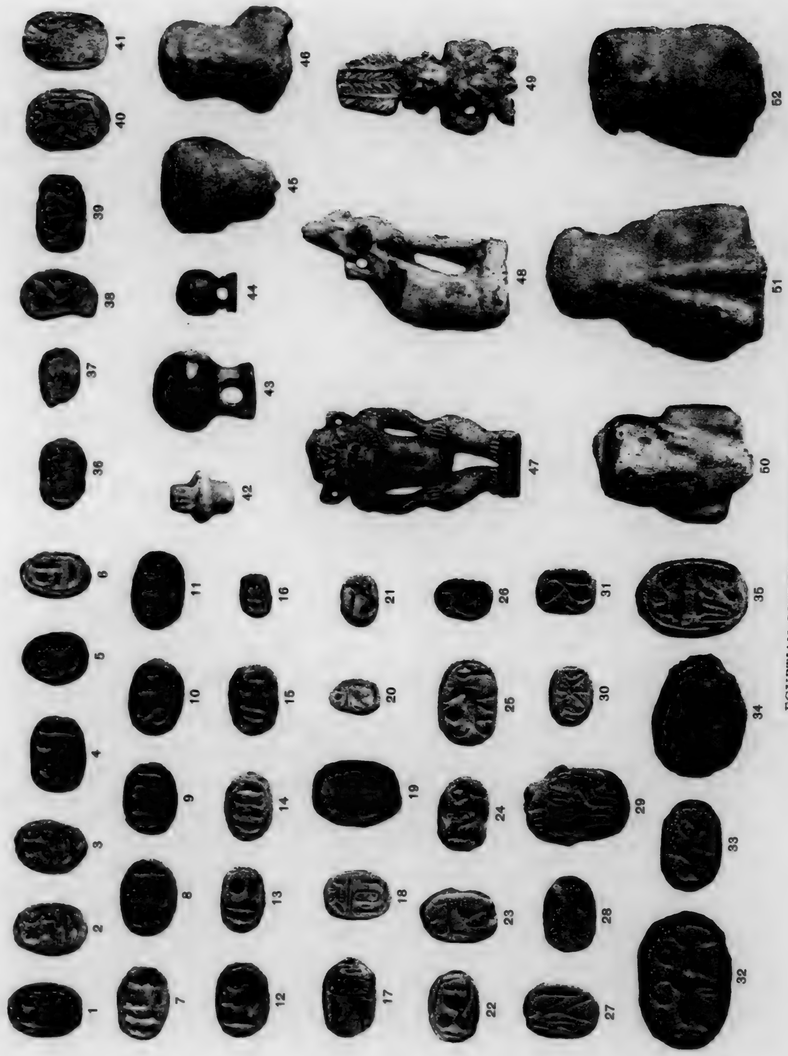
Represented kneeling on the left knee, with right knee raised and foot squarely on base. It is the position of one about to rise, or to upraise an object, from the ground, and occurs in figures

of the god Shu, who is represented with arms uplifted and supporting the horizon and sun's disk above his head (cf. Maspero, *Dawn of Civilization*, p. 127). Shu was the "uplifter" of the heavens from the earth. These representations of him are very common in the Late New Empire, and are the only ones in which this unusual position occurs, so far as I know. Consequently we may have here the lower part of such a figure.



EGYPTIAN OBJECTS FROM THE HERAEUM

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EGYPTIAN OBJECTS FROM AEGINA (1:1)

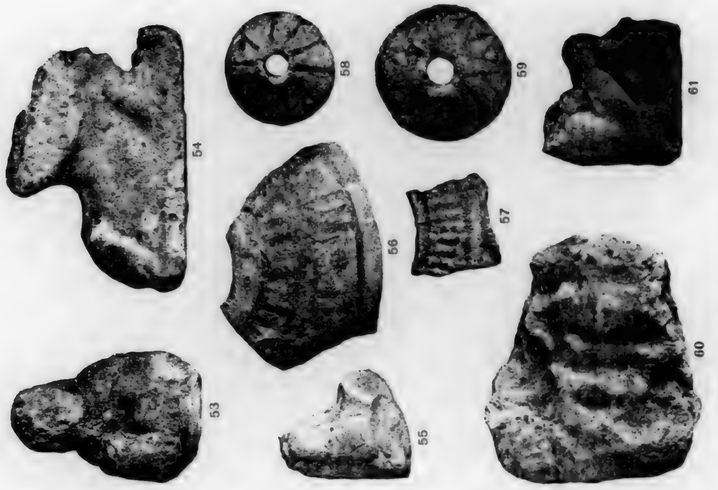


EGYPTIAN OBJECTS FROM THE HERAEUM (5:6)

INDEX



EGYPTIAN OBJECTS FROM AEGINA (1:1)



EGYPTIAN OBJECTS FROM THE HERAEUM (1:6)

INDEX

INDEX

By MAY LOUISE NICHOLS

Achaean League, 183, 359.
Achaean origin of Mycenaean style, 71.
Achaia, coin of, 358.
Acropolis (Athens), development in terra-cotta figurines, compared with that of female figures from, 8, 18; poros heads from, 29; terra-cottas from, 34; statue from, compared with terra-cotta figurine, 35; group of bulls attacked by lions from, compared with terra-cotta group from Heraeum, 40; bronze reliefs from, compared with terra-cotta reliefs from Heraeum, 50, 51; marble relief of charioteer from, compared with terra-cotta relief from Heraeum, 53; vases from, 74, 76, 89, 133; bronze relief from, compared with design on vase, 169; bronzes from, compared with bronzes from Heraeum, 194 *n.* 2, 204 *n.* 2, 274 *n.* 1, 288, 289, 295, 296, 324, 326, 327, 329, 336.
Advanced Archaic terra-cotta figurines, 9, 38 f.
Advanced Argive terra-cotta figurines, 5, 7, 8, 9, 24 ff.
"Aegean" pottery, 66, 71, 77.
Aegina, relief from, compared with terra-cotta relief, 51; vases from, 64, 76, 89, 116, 119, 120, 130, 131, 133, 135, 138, 152, 153, 158, 175 *n.* 4; mention of, 174, 175; suspension vase from, similar to bronze one from the Heraeum, 286; Egyptian objects from, 367, 368, 372.
Aeolian vases, 150, 151.
Agrigentum, terra-cotta figurines from, 10 *n.* 1.
Agrippa, L. Caninius, name on coin, 358.
Αἴας (?), on vase, 173, 185.
Αἰνέας (?), on vase from Heraeum, 173, 185.
ἀκροχειρισμός, represented on terra-cotta plaque (?), 52.
Alabastra, 126, 155, 166, 171, 178.
Aliki, vases from, 89.
Amathus, shield from, 40; fibula from, 251 *n.* 3.
Amen Ra, on scarabs from Heraeum, 370, 371; barque of Ra, 370, 371.
Amorgos, bracelet from, 251 *n.* 2.
Amphora à colonette, preliminary step to, 135; fragments of, 172, 173; in Berlin, 185.
Amphoras, primitive, 69; Mycenaean, 73, 79, 83, 84, 88, 92, 93, 96; geometric, 105, 106, 107, 109, 112, 117, 118, 137, 157; miscellaneous types, 160; Corinthian, 166, 171, 172, 173; black-figured style, 176, 178; red-figured style, 179.
Amulets, 344, 372, 373.
Amyclae, vase fragment from, 112 *n.* 1.
Analysis of clay of vase fragments, 64 *n.* 9.
Androsphinx, on ivory, 352.
Animal figures, on vases, in Mycenaean style, 90, 91, geometric style, 104, 107 ff., Argive style, 127, 139, 143, 145, 149, 153, 155, on miscellaneous types, 160, 161, heads of (calves?), 98; in Corinthian style, 167, 168, 169, 170, 171, 172; in black-figured style, 177; on engraved stones, 343, 346, 347, 350, winged, 349, monkey-like, 349.
Animals, of terra-cotta, 5, 9, 15, 23, 39 ff.; of bronze, 193, 197–207; for head of bronze pin, 235; in ivory, 353.
Anthedon, knife from, 299.
"Anthropomorphic" vases, 148.
Antoninus Pius, coin of, 358, 360, 361.
Antyx (ἄντυξ), on terra-cotta plaque, 53; on vases, 163, 164; of bronze, 298.
Aphidna, vase fragment from, 69, 99.
Aphrodite, represented in terra-cotta figurines (?), 14, 15, 34; bronze statuette, probably of, 197; on coins, 358.
Apollo of Canachus, 195, 197.
Apollo of Melos, compared with figure on terra-cotta plaque, 48; with bronze statuette, 195 and *n.* 4.
Apollo, Ptoan, bronze reliefs from temple of, compared with terra-cotta reliefs from Heraeum, 51, 52.
Apollo, Tenean, compared with figure on terra-cotta plaque, 48, 49; treatment of hair similar to that of, in figure on vase, 154, in gorgon on ivory, 351.
"Apollo" type, 14, 29; bronze statuette compared with, 195, treatment of hair in, 195 *n.* 4; porcelain figure of, 372, 373.
Apparel, articles of, in ivory, 353.
Apples, terra-cotta figurine holding (?), 36.
Applied color, use of, in vases, 123, 156–159, 160, 163.
Apulia, Sikel village in, pin from, 240 *n.* 1 and 7; ring from, 251 *n.* 3.
Arcadius, coin of, 362.
Archaic heads on terra-cotta figurines, 7, 9, 14 *n.* 5.
Archaic terra-cotta figurines, 8, 9, 14.
Archermus, Niké of, 7, 52, 195 *n.* 3.
Argive-Linear decoration, on terra-cotta figurines, 7, 27; on vases, 126–144. *See also* Linear.

Argive ("Proto-Corinthian") style in vases, Argive origin, 62 f., 64 *n.* 9, 67, 119 ff.; linear characteristics, 66, 120; derived from Mycenaean style, 121; contemporaneous with geometric, 121 ff.; absorption of Oriental influence, 122 ff., 144 ff.; relation to Corinth, 123, 153.
Argive embargo against Attic vases, 175, 180, 183.
Argive type of engraved stones and gems, 346–349.
Argolid, the, as centre of Mycenaean civilization, 78; silver pin from, now in British Museum, 191 *n.* 1, 217 *n.* 2, 339; coins of, 359.
Argos, vase fragment at, compared with Heraeum fragment, 114; vases from, 119; coins of, 359 f.
Aristeia, name in inscription on bronze, 332.
"Aristonothos" vase, compared in technique with one from Heraeum, 160 *n.* 1, 163, 164 and *n.* 1.
Arrow, on vases, 113, 151, 162, 163, 181.
Arrowhead pattern, on bronzes, 199, 200, 259, 262, 283, 285, 293, 295; on engraved stones, 347, 348; on ivory, 352.
Arrowhead, of stone, found at Heraeum, 354.
Artemis, represented in terra-cotta figurines (?), 14, 15, 35. *See also* Persian Artemis.
Aryballoi, 70, 71, 126, 143, and 148 *n.* 1 (ring-form), 153, 166, 171, 185; of ivory, 353.
Askos, 166, 171.
Astarte, 13 *n.* 10; with Hathor crown, compared with bronze statuette, 197.
Athena, represented in terra-cotta figurines (?), 14; on vase, 179; bronze serpent from aegis of, 204.
Athena Cranaea, temple of, bronze fibulae from, 244 *n.* 2; handle from, 289.
Athenaeus, quoted, 13 *n.* 11, 175 *n.* 1.
Athens, vases from, 142, 154; bronze relief in, compared with design on vase from Heraeum, 169; bronzes found at, relation to Heraeum bronzes, 193; embargo on pottery from, 175; inscription from, 332. *See also* Acropolis.
Attica, vases from, 64, 107, 119.
Augustus, head of, on coin, 358.
Aurelian, coins of, 361, 362.
Aurelius, Marcus, head of, on coin, 358, 359.
Auxesia, story concerning statue of, 174.

Bakeshop scene, terra-cotta, 15, 43.
Ball, bronze, 331.
Balls, on vases, 159, 177 (on shield); on coin, 363.
Bands, bronze, ornamented, 270.
Bars, bronze, 330 f.
Bather, A. G., references to, 50 *n.* 1, 51 *n.* 8, 54 *n.* 3, 192 *n.* 2, 202 *n.* 3, 274 *n.* 1, 336, 338.
Bathos, terra-cotta figurines from, 10 *n.* 1.
"Bauernstil," 103.
Beads, bronze, 264; engraved stones used as, 344, 345; of glass or stone, 92, 353; of glazed paste, 354.
Bear, terra-cotta, 15, head of, 41.
Bed, terra-cotta, 42; bronze fragment of, 329.
Bee-hive tomb, near Mycenae, 10 *n.* 2; tombs near Heraeum, 73, 75, 79, 81, 88, 89, 91–95, 98.
Beetle, intaglio on bronze seal ring, 251.
Bell, bronze, 299; bell-shaped pendant, 264.
"Bell" of wheel, bronze, 298 f.
Berlin, tripod vase from Tanagra in, 52; Corinthian pinakes in, relation to pinakes from Heraeum, 54; Argive lekythos in, 145, 163, 179; tripod bowl in, 170; vase in, 195 *n.* 3; armlet in, compared with bronze from Heraeum, 267 *n.* 1.
Bes, terra-cotta figures of type of, 8, 13, 28, 29; on seal of silver ring, 338; ivory figure of, 353; porcelain figure of, 368, 372.
Biga, on vase, 154; on terra-cotta disk, 354.
Binding, bronze, 328.
Binding-strips, bronze, 269.
Bird, human-headed, terra-cotta, 41; "bird-face" in terra-cotta figurines, 4, 5, 6, 7, 9 and *n.* 6, 14 *n.* 5, 16 ff.
Birds, terra-cotta, 15; terra-cotta figurine holding, 36; on vases, 90, 108, 109, 111, 114, 115, 116, 117, 118, 127, 129, 130, 133, 135, 139, 144, 146, 149, 150, 152, 153, 162, 163, 167, 168, 169, 171, 172, 174, 183, 185; of bronze, aquatic, 204 f., land, 205–207, on safety-pin, 244, head and neck of, wing of, 274, head, beak of, 297; 331; on engraved stones, 343, 347, flying, 348, 349; on ivory, 351, 352; shell of egg of, 353.
Black-figured style, 60, 62, 65, 66, 174–178.
Boar, on vases, 147, 152, 165, 167, 169.
Boat, on vase, 113 and *n.* 2, 115; inverted, form of arch of bronze safety-pin, 242.
Bodkins, of ivory, 353.
Boehlau, J., references to, 54 *n.* 6, 144 *n.* 2, 145, 150 *n.* 2, 151, 160 *notes* 1, 2, 235 *n.* 4, 240 *n.* 6, 242 *n.* 4, 243 *n.* 1.
Boeotia, terra-cotta figurines from, 10 *n.* 1, 14 and *n.* 5; vases from, 109, 116, 143; bronze pin from, 235 *n.* 4, 240 *n.* 6, 242 *n.* 4; armlet from, 267 *n.* 1.
Bologna, fibulae from, 240 *n.* 1, 242 *notes* 1 and 2, 244 *n.* 4.
Borgo S. Sepolchro, pins from, 223 *n.* 3.
Bos-öjük, vases from, compared with those from the Heraeum, 68, 70, 97.
Boston, Argive lekythoi in, 135, 146, 152 *n.* 1.
Bottle, of colored glass ("Phoenician"), 353.
Bow, terra-cotta figure holding, 15 *n.* 4, 35; on vases, 113, 181.
Bowls, 72, 73, 74, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 96, 98, 105, 106, 107, 108, 109, 110, 112, 113, 114, 115, 116, 158, 161, 170, 173; three-legged, 70, 74; bronze, 284–286.
Boxing-match, represented on terra-cotta plaque, 52; on vase, 113.
Boyd, Harriet A., reference to, 241 *n.* 7.
Bracelets, bronze, 251.

Brachycephalism, in head of bronze horseman, 195 *n.* 1.
Braid-pattern. *See* Guilloche.
Branchidae, seated figures from, 14, 36.
Bread, woman kneading, terra-cotta figurine, 18.
Bricks, terra-cotta, 47.
Bridle, on vases, 148, 154, 184.
British Museum, vases in, compared with Heraeum specimens, 131, 132, 135, 138, 143 *n.* 1, 144, 146, 154, 155, 160 *n.* 1, 166 *n.* 2, 180; silver pin in, from Argolis, 191 *n.* 1, 217 *n.* 2, 339; bronzes in, compared with Heraeum bronzes, 204 *notes* 1, 2, 217 *n.* 1, 240 *n.* 1, 244 *n.* 3, 251 *n.* 3, 294, 300.
Bronzes from the Heraeum, 191–339; introduction, 191–193; process of cleaning, 192 and *n.* 2; classification, 192; various periods in, 193; technique of, 193; relation to metal work of other centres, 193; catalogue, 194–331; fragments of statues, 194, statuettes and fragments of statuettes, 194–197, animals, 197–207, ornament and toilet, 207–275, vessels, 275–298, implements, utensils, structural pieces and materials, 298–331; appendix, inscriptions on the bronzes, 332–339.
Buckles, bronze, 249.
Bud, bronze nail-head representing, 327.
Bull, attacked by lion, terra-cotta group, 15, 39 f., motive in Greek art, 40; on vases, 139, 146, 167, 169. *See also* Cattle.
Bull's head, in terra-cotta, 14, 23, 41; on vases, 146, 183; on engraved stones, 349; on coin, 357.
Bulle, H., reference to, 265 *n.* 1.
Butterfly (?), on ivory, 352.
Button, bronze, 327; button-shape, in engraved stones, 345, 346, 347, 348; in ivory, 352.
Byzantine coins, 357, 362 f.
Byzantine ware, vases, 180, 184.

Cabirion near Thebes, potters at, 64; vases found at, 180; inscription from, 338.
Cakes, dish of, terra-cotta, 15, 42.
Calathi, representation of, on terra-cotta figurines, 10 *n.* 2, 12 f., 26, 27, 32; vases, 124 f., 145.
Callaly Castle (Forman Collection), oinochoe formerly at, 129.
Camirus, poros statuette from, compared with terra-cotta figurine, 35; gold *hormus* from, compared with terra-cotta plaque, 51; vases from, 143, 155, 181; bronze statuette of goat from, 201 *n.* 1; Egyptian objects from, 367, 369.
Canachus. *See* Apollo of.
Caps, bronze, 328.
Captive, on coin, 361.
Caracalla, head of, on coin, 359.
Carneia, in inscription on bronze, 336.
Carus, coin of, 361.
Castings, bronze, 331.
Cat, porcelain figure of, 368, 372.
Cattle, bronze, 201 ff.; on engraved stones, 348, 350.
Cauldron, on vase, 164, 165; of bronze, 275 ff., 329.
Centaur, terra-cotta, 15, 40; on terra-cotta plaque, 48, 53 f.; on relief vase in Louvre, 49 *n.* 1; on vases, 162, 163, 181.
Centre-piece, bronze, 328.
Cephalonia. *See* Corfu.
Cervetri, gold breastplate from, design of, compared with that of bronze from Heraeum, 251 *n.* 1.
Cesnola, L. P. di, references to, 38, 40, 197 *n.* 1, 250 *n.* 1.
Chaeronea, bronze rings from, in Athens Museum, 250 *n.* 3.
Chain, bronze, 327 f.
Chair, terra-cotta, 5 and *n.* 1, 42, 92.
Chalcidian origin of "Proto-Corinthian" style, 119.
Chalcidian vases, 163, 169.
Chariot, on terra-cotta plaques, 48, 53, 54; on vases, 113, 163, 164, 177.
Charioteer, on terra-cotta plaque, 53.
Chase, G. H. *See* Waldstein.
Checkerboard pattern, on vases, 105, 106, 109, 114, 127, 128, 129, 130, 137, 139, 140, 141, 142, 151, 152, 153, 155, 162, 168.
Cheramyes, statue, 30.
Chimaera, on coin, 358.
Chisel, bronze, 300.
Chiton, method of fastening as shown by terra-cotta figurines, 11; on terra-cotta plaque, 50; on vases, 117, 169; on bronze, talaric, 265; on coin, 357.
Chiusi, vase from, 118.
Chloris (in group with Leto), on coin, 359.
Christ, bust of, on coins, 363.
Circles (with or without central dot), on vases, 69, 84, 86, 87, 88, 105, 107, 109, 111, 115, 145, 146, 149, 157, 158, 163, 170, 183; on lamp, 184; on bronzes, 206, 209, 210, 213, 220, 223, 227, 228, 229, 231, 235, 248, 249, 250, 265, 266, 268, 269, 270, 274, 275, 278, 283, 284, 285, 297, 311, 314, on engraved stone, 349; on ivory, 352, 353.
Cist, bronze, in Museo Gregoriano, compared with Heraeum bronze, 290.
Clamps, bronze, 328.
Claw, bronze, 274.
Clazomenae, technique of sarcophagi from, compared with that of vase fragments from Heraeum, 150.
"Clover-leaf" type of fibula, on terra-cotta figurines, 10 and *n.* 2, 21, 23, 26, 31.
Coatings, bronze, 270.
Cock, terra-cotta, 15, 41; on vase, 178; of bronze, 205 f., 274 *n.* 2.
Codrus, legend of, 104.
Coins from the Heraeum, 357–363; general discussion, 357; catalogue, 357–363; of Greece, 357–360; of Rome (Empire), 361 f., (Eastern Empire), 362 f.; Venice, 363; uncertain, 363.
Color, use of, on terra-cotta figurines, 5, 6, 7, 8, 9;

use of extra or applied, in vases, 123, 156–159, 160, 163.
Commodus, head of, on coins, 358, 359.
Cones of terra-cotta, 15 and *n.* 10, 43 f.
Constantius Chlorus, coin of, 361.
Constantius II., coins of, 362.
Containers, bronze, 296 f.
Conventionalism, in Mycenaean vases, 76, 81.
Conze, A., reference to, 54 *n.* 4, 163, 195 *n.* 4.
Copenhagen, vases in, 52, 113, 114, 115.
Copper, 272, 275. *See also* Pins.
Coral, bit of, 354.
Corcyra, terra-cotta figurines from, 14 *n.* 4, 34, 35.
Corfu, Cephalonia, Zante, coin of, 363.
Corinth, vases from, 107, 144; its connection with Argos in history of vase painting, 122, 123, 145, 166; archaic bronze relief from, 197 *n.* 2; coins of, 357 f.
Corinthia, coins of, 357 f.
Corinthian pinakes in Berlin, connected with those from Heraeum, 54.
Corinthian style, in vases, 8, 60, 62, 65, 66, 119, 122, 145, 165–173, 182, 185; Old, 167 ff.; New, 172 ff.
Cornucopia, on coin, 361, 362.
Coroplastic art, interaction of vase painting and, 6 and *n.* 9, 7.
Corselet, on vase, 177.
Cotilon (Bassae), mirrors from, 265 *n.* 2, 266 *n.* 1.
Cover-knobs, 140.
Covers, horses on covers of geometric vases, 23; of vases, 115, 116, 137, 138, 139, 140, 169.
Cow, terra-cotta, 15, head of, 14, 23; on vases, 151; of bronze, 201 and *n.* 3, 202; on engraved stone, 349. *See also* Cattle.
Crab, on engraved stone, 348.
Crepereia Tryphaena, sarcophagus of, 269 *n.* 1, 278.
Crescents, on vase, 71; on bronze, 204, 276, 283, 285.
Crete, winged human figures from, 50 *n.* 5; as possible centre of source of Mycenaean civilization, 66, 71; vases from, 79, 115, 156.
Cross, Greek, on terra-cotta spools, 44; of terra-cotta, 44.
Cross, on vases, 82, 105, 111, 149, 151, 154; on lamps, 184; on bronzes, 209, 210, 213, 264, 295, 297, 310, 312, 315; on engraved stone, 350; on coins, 212, 363.
Cups, 72, 92, 95, 107, 180, 184.
Curtius, E., concerning "heraldic" animals, 28, 110 *n.* 1; concerning running figures, 28; other references to, 50 *n.* 2, 52 *n.* 1, 175 *n.* 3.
Cut ornaments, bronze, 274.
Cybele, represented in terra-cotta figurines (?), 14.
Cyclades, primitive vases from, compared with those from Heraeum, 68, 69, 70.
Cylixes, vases, 74, 81, 86, 88, 92, 95, 166, 172, 173, 174, 176, 177, 178, 179; cylix on bronze mirror-handle in hand of satyr, 265.
Cymbals, bronze, 299.
Cyprus, influence of, in terra-cotta figurines, 15; terra-cotta figurines from, 27; vases from, 10 *n.* 1, 66, 135, 148; head from, compared with bronze statuette, 197 *n.* 1; rings from, 251 *n.* 3.
Cyrenaica, terra-cotta figurines from, 10 *n.* 1, 19, 34.
Cyrenean vases, 62, 65, 148, 173.

Daimons, on reliefs from Olympia, compared with winged figures on terra-cotta plaques from Heraeum, 52; on silver ring from Heraeum, 338.
Daisy, design on porcelain whorl, 373.
Damia, story concerning statue of, 174.
δαμιοργοί, in inscription on bronze, 333.
Dancing, represented on vase, 114.
DeCou, H. F., Bronzes of the Argive Heraeum, 191–331; Inscriptions on the Bronzes, 332–339; Coins from the Argive Heraeum, 357–363; theory as to headdress of terra-cotta figurines, 13 *n.* 4.
Dedicatory use of vases at the Heraeum, 64.
Deer, terra-cotta figure holding, 15 *n.* 4; on vases, 108, 115, 116, 150, 151, 164, 167, 168; of bronze, 200 f.
Deianeira, earliest representation of, on vase, 163.
Deinoi, 135, 185.
Delos, Nicandra statue from, 8; winged female figure from, compared with terra-cotta figurine, 28; engraved stone from, 348.
Delphi, statue by Polymedes at, 195; retrograde writing in names of Argive kings at, 333.
Demeter, terra-cotta figurines dedicated to, 13; represented in terra-cotta groups (?), 14, 22.
Deposits of terra-cotta figurines, 3 *n.* 3.
De Ridder, A., references to, 49 *n.* 1, 51 *n.* 9, 52, 181 and *n.* 3, 194 *notes* 2, 4, 196 *notes* 2, 3, 4, 197, 204, *n.* 2, 288, 289, 296.
Diadems, bronze, 196, 240 *n.* 5, 265, 266 f.; on coins, 360, 362, 363.
Diamonds, on terra-cotta plaque, 48; on vases, 83, 84, 87, 90, 142; on bronzes, 200, 243, 282, 283, 284, 309; on ivory, 353.
Dictaean Cave, pins from, 217 *n.* 1; rosettes on objects from, 232 *n.* 1, 299 *n.* 1.
Digamma, in inscription on bronze, 333.
Diodorus Siculus, quoted, 51 *n.* 4.
Dionysus, on vase, 178 (head of), 179.
Dipylon style, on terra-cotta plaques, 53, 54, in vases, 65, 102 f., 115, 118, 122, 157; in bronzes, 193.
Disks, as earrings of terra-cotta figurines, 12; flower-like, 15, 43; of bronze, 267–269; use of, 267 *n.* 2, 269 *n.* 1; gold disks from Mycenae, 269 *n.* 2; inserted disks, 330; terra-cotta disk, 354.
Dodona, bronze plaque from, compared with terra-cotta plaque from Heraeum, 50 f.; bronze reliefs from, compared with terra-cotta reliefs from Heraeum, 51; bronzes from, compared with bronzes from Heraeum, 193, 295, 297, 308, 316 *n.* 1.

"Dodwell" vase, 169.
Dog, terra-cotta head of, 15, 41; on vases, 108, 115, 147, 149, 151, 152, 153, 182; on scarabs, 368, 371.
Doll, in arms of terra-cotta figurine, 37.
Dolphin, bronze, 274; on engraved stone, 350.
Domitian, head of, on coins, 358.
Dorian Invasion, 66, 102, 103, 121.
"Dorian" technique, 156.
Dörpfeld, W., references to, 30, 300.
Doryphoros of Polycleitus, Furtwängler's view supported by relief on lamp from Heraeum, 184.
Double-axe, on vases, 112 f., 116; on engraved stones, 347.
Double writing of consonants in Argive inscriptions, 333.
Dove, terra-cotta figure holding, 15 *n.* 4, 34; of terra-cotta, 41; on coin, 358.
Dresden, terra-cotta figure from Thisbé in, 24; vases in, compared with Heraeum specimens, 146, 148 *n.* 1.
Duck, on vases, 90, 110, 169; on scarab, 371.
"Dumb-bell" form of safety-pin, on terra-cotta figurines in Athens Museum, 10 *n.* 2; from Heraeum, 25; of bronze, 242.
Dümmler, F., references to, 120, 143, 181.

Eagle, on vase, 174; on engraved stone, 350; on ivory, 351, 352; on coin, 358.
Ear, on vase, 179.
Early Archaic terra-cotta figurines, 8, 9, 29 ff.
Early Argive vases, 121, 124 ff.
Early Attic vases, 62, 65, 66, 122, 145, 165, 173, 351.
Early Naturalistic style in bronzes, 199, 201.
Earrings, forms of, on terra-cotta figurines, 12.
Edgar, C. C., reference to, 276 *n.* 1.
Eel, on vases, 80.
Egg, bit of shell of, 353.
Egypt, excavations in, as throwing light on date of Mycenaean civilization, 77; Mycenaean ware from, 156.
Egyptian (or Graeco-Egyptian) objects from the Argive Heraeum, 367–374; general discussion, 367–369; catalogue, 370–374.
Egyptian horseman in terra-cotta of Egyptian manufacture, 8, 29.
Eileithyia, represented in terra-cotta groups (?), 14. *See also* Hera Eileithyia.
Ekethaio (?), name in inscription on bronze, 332.
Eleusis, skyphoi from, 112 *n.* 2, 113 *notes* 1, 2; vases from, 119, 124 *n.* 1, 128, 132, 144, 158; pin in museum at, 235 *n.* 3; gold ring in museum at, 261 *n.* 2; bronze plated with gold in museum at, 273 *n.* 1; Egyptian objects from, 367, 369, 372.
ἕλιξ, represented on terra-cotta figurines, 10, 11, 21.
Ellipses, truncated, decoration on bronze, 276, 277.
Engraved stones, gems, and ivories, 343–354; general discussion, 343–345; classification and catalogue, 345–354.
Epidaurus, story concerning, 174.
Eros (?), on coin, 358.
Este, buttons from, 327.
Eudamas, name in inscription on bronze, 338.
Euphronios, vase in style of, 180.
Evans, A. J., references to, 48 *n.* 2, 66, 79, 113, 344, 345, 347, 348, 349, 367.
Exergue, 173, 179.
Eye, on vases, 177, 179.

Fasteners, bronze, 327 f.
Female figures, large proportion of, among terra-cotta figurines, 4 *n.* 4, 13 and *n.* 5; on terra-cotta plaque, 48; on vases, 108, 114, 162, 163, 169, 170, 172, 174, 179, 183; of bronze, 196 f.; on terra-cotta disk, 354; on coins, 359, 360, 361, 362.
Fibulae, forms of, on terra-cotta figurines, 10 f.; bronze, 191, 193, 203 *n.* 1, 240 *n.* 1; of *sanguisuga* type, 244 *n.* 4; of ivory, 353 (with bronze pin). *See also* Safety-pins.
Figurines. *See* Terra-cotta.
Finger-rings, bronze, 250 f. *See also* Rings.
Fish, on vases, 78, 80 f., 91, 94, 111, 112, 113, 115, 117, 134; bronze handle in form of (?), 293; on ivory, 352.
Flower, terra-cotta figure holding, 15 *n.* 4, 34; on terra-cotta plaque, 50; in mouth of lion on gold breastplate from Cervetri, 251 *n.* 1; on handle of vessel, 288; nail-head representing, 327; on coin, 359, 360; on porcelain whorl, 373.
Flower pattern, on vases, 79, 80, 83, 85, 88, 94, 105, 128, 134, 137, 138, 167, 178; on bronze pins, 234 *n.* 2, 251.
Flute-player, terra-cotta, 17, 18.
Fly, in intaglio on bronze seal ring, 251.
Foot with sandal, terra-cotta, 16, 43.
Fortune (Tyché), on coin, 358.
François vase, group on, compared with group on terra-cotta plaque, 53; other reference to, 195 *n.* 3.
Fränkel, Max, references to, 195 *n.* 4, 196 *n.* 4, 204 *n.* 1, 333 and *n.* 1, 334, 335, 336.
Free style, terra-cotta figurines of, 9, 39.
Frog, bronze, 203; ivory, 352.
Fruit, terra-cotta figure holding, 15 *n.* 4, 34; on terra-cotta mould, 43, 48; nail-head representing, 352.
Furtwängler and Loeschcke, classification of Mycenaean vases, 62, 72, 74–77, 82 f.; theory for origin of geometric style, 66, 102; other references to, 85, 86, 93, 119.
Furtwängler, A., interpretation of winged figures on Olympia reliefs, 52; concerning the Aristonothos vase, 164; on bronze relief in Athens, 169; view as to Doryphoros of Polycleitus supported by relief on lamp from Heraeum, 184; theory as to

bronze safety-pin, 249 *n.* 1; dating of vase similar to Heraeum specimen, 287 *n.* 1, other references to, 10 *n.* 8, 15 *n.* 5, 17, 42, 51 *n.* 6, 52 *n.* 7, 53 *n.* 1, 54 *n.* 5, 64 *n.* 2, 99 *n.* 2, 119, 143, 160 *n.* 2, 164 *n.* 3, 170, 183 *n.* 1, 186, 194 *n.* 5, 200 *n.* 2, 215 *notes* 1, 2, 232 *n.* 2, 243 *n.* 1, 246 *n.* 3, 247 *n.* 2, 261 *n.* 1, 287 *n* 1, 293, 294, 325, 338. *See also* Olympia.

Galerius, coins of, 361 f.
Galley, on vase, 113 *n.* 2.
Gallienus, coin of, 361.
Gamedes oinochoe, compared with one from the Heraeum, 160 and *n.* 1.
Gardner, E. A., references to, 29, 173, 367 *n.* 7.
Gear, leather, imitated in bronze, 275.
Gela, terra-cotta figurines from, 10 *n.* 1.
Gems, Mycenaean, compared with terra-cotta plaque from Heraeum, 28. *See also* Engraved stones.
Genre scenes, on vases, in geometric style, 104, 108, 113, 157.
Geometric, terra-cotta figurines, 5, 6, 9, 14, 23; geometric style in vases, 60, 62, 64, 101 ff., result of Dorian Invasion, 66, 102, method of classification, 101, 102, 104, difference from Mycenaean vases, 102, 104, theories as to origin of, 102, development of, 103, 104, connection with Dipylon style, 104, 115, date of, 104, relation to Argive style, 121, 157; "geometric" period in bronzes, 193, geometric style in bronzes, 197, 200, 204, geometric ornamentation on safety-pins, 242, 243; engraved stones, 343, 346, 349 f.
Girdle, bronze, 266.
Glass, vases, 184; bottles of, 353.
Glaze color, use of, on terra-cotta figurines, 6.
Globe, on coin, 361, 362.
Goad, on vases, 162, 163, 164, 177.
Goat, on vases, 150, 153, 154, 167, 168, 169, 172, 174; bronze statuette from Camirus in British Museum, 201 *n.* 1.
Gold, bronze plated with, 273 and *n.* 1; tacks from Mycenae, 325, fragments of sheet gold, 329, rivet, 338.
Goose, on vases, 159, 167.
Gordion, fibulae from, 246 *notes* 2, 4.
Gorgon, terra-cotta figurine representing (?), 28; on terra-cotta plaque (?), 52; gorgoneion on vase fragment, 171; on ivory, 351.
Gospel, book of the, on coins, 363.
Graeco-Egyptian. *See* Egyptian.
Gratian, coin of, 362.
Greaves, on vases, 161, 162, 172, 177.
Greece, coins of, 357 ff.
Griffin, terra-cotta, head of, 41; on vases, 152, 171; on bronzes, 193, 274, 294; on engraved stones, 350; on ivory, 351, 352; on scarab, 371.
Griffith, F. Ll., references to, 367 *n.* 2, 370, 371, 373.
Guilloche, on vases, 82, 86, 87, 88, 107, 109, 129, 130, 143, 145, 158, 161, 162, 163; on bronzes, 266, 293.
Gurlitt, W., reference to, 196 *n.* 1.

Hadaczek, C., references to, 44 *n.*, 240 *n.* 4.
Hadrian, head of, on coins, 359, 360.
Haghios Sostis, terra-cotta figurines from, 9.
Hair, development of, on terra-cotta figurines, 12; treatment of, on terra-cotta plaque, 49, on vase, 154; bronze, lock of, 194, treatment of, 195 and *notes* 3, 4, 197, 287.
Hallstatt period, vase fragments in Vienna from graves of, 69; in relation to geometric style, 103.
Halo, on coins, 363.
Handles, bronze, rings used as, 254 *n.* 1, of mirrors, 264–266, plates with, 275–277, bowls with, 285, of vessels, 288–294, of tripods, 295, miscellaneous, 297 f.
Hare, terra-cotta figure holding, 15 *n.* 4, 35; on vases, 146, 147; porcelain figure of, 373.
Harness, bronze, 275.
Harpy, terra-cotta, 41.
Hartwig, P., enumeration of polychrome vases, 179 f.
Hawk, on scarabs, 370, 371.
Hebe, represented in terra-cotta groups (?), 13, 22.
Heermance, T. W., Inscriptions on Vases, 185–187.
Helbig, W., references to, 10, 53 *n.* 1, 118, 119, 163 *n.* 1, 164, 295.
Helladios, name in inscription on bronze, 332.
Helmet, on terra-cotta figurines, 40; on vases, 148, 152, 161, 162, 164, 170, 172, 174, 183; on coins, 361, 362.
Hemispherical engraved stones, 345, 346, 347.
Hera, seated figures of, 5, 15, represented in terra-cotta figurines (?), 13, 22; cult of, 68; name in inscriptions, on vases, 185 f., on bronze, 332, 336, 337, 338; on terra-cotta disk (?), 354; head of, on coin, 359.
Hera Antheia, 16, 35; terra-cotta figurines representing (?), 10, 21.
Hera Eileithyia, 13 *n.* 7, 15 *n.* 4, 30.
Hera ἵππιος, 40.
Hera, of Polycleitus, 13, 39; in group with Hebe, 22.
Heraea, 22 *n.* 1, 336.
Herakles, on vases, 163, 177, 181.
"Heraldic" schema, lions on terra-cotta plaque, 7, 28; on vases, 90, 108, 109, 110, 111, 112, 117, 118, 127, 169.
Herodotus, references to, 65 *n.* 1, 174 *notes* 1, 2, 175 and *n.* 1, 193, 336.
Herring-bone pattern, on vases, 69, 70, 87, 92, 130, 146, 181.
Heuzey, L., concerning development of "Bes" type, 28; concerning Rhodian ware, 37; other references to, 10 *n.* 1, 14 *n.* 5, 18, 19, 22, 27, 28, 34, 35, 36, 37, 41, 197 *n.* 3.

Himation, on vase, 169; on bronze, 265.
Hinge, bronze, 328.
Hissarlik, primitive vases from, 18, compared with those from Heraeum, 68, 70, 97. *See also* Troy.
Hogarth, D. G., statement as to winged human figures of "Mycenaean" style discovered by him in Crete, 50 *n.* 5; excavations in Melos, 66; other references to, 202 *n.* 1, 217 *n.* 1, 232 *n.* 1, 299 *n.* 1.
Holleaux, M., references to, 51 *n.* 9, 194 *n.* 5, 195 *n.* 4.
Homer, quoted, 11 *notes* 4 and 5.
Homolle, Th., reference to, 195.
Hooks, bronze, 324.
Hoppin, J. C., The Vases and Vase Fragments, 57–184. *See also* Waldstein.
Horse, terra-cotta, 6, 15, 23, 29, 40, 41; head of, terra-cotta, 41; on terra-cotta plaques, 48, 53, 54; on vases, in Mycenaean style, 90, in geometric style, 108, 109 ff., 114, 115, 116, 117, with human figures, 111, 112, 117, 118; in Argive style, 130, 148, 150, 152, 154, 162, 163, 164, 165; in Corinthian style, 172, 173, 174; in black-figured style, 176, 177, 178; in red-figured style, 179; on "red" ware, 182; on Megarean ware, 183; on lamp, 184; of bronze, 197–200; on bronze, 243, 265, 273 *n.* 1; on engraved stones, 343, 347, with human figures, 347, winged, 348; on coins, 357, 361.
Horseman, terra-cotta, 8, 29; on vases, 177, 178, 182, 183; bronze statuette of, 194 f., 196 *n.* 4, position as shown on vases, 194 *n.* 3, and in bronze rider in National Museum, Athens, 194 *n.* 4, compared with other examples in marble, 194 *n.* 5; on coins, 357, 358, 361, 362.
Horseshoe ornament, on bronze, 249, 266, 299; shape, in links of bronze chain, 327.
House, on engraved stones, as in Cretan pictographs, 347, 348.
Household use, articles for, in ivory, 353.
Human figure, on vases, in Mycenaean style, 90 f., in geometric style, 104, 107 ff., 111 ff., in Oriental Argive, 150, 151, 152, in miscellaneous types, 162, 163, on Corinthian vases, 169, in black-figured style, 177, 178, on "red" ware, 182, 183; on lamp, 184; on bronze, bearded, draped, 265; on engraved stones, 343, 346, 347, 348, 349; in ivory, 353; on coins, 359, 361, 362, 363; in porcelain, 373. *See also* Horse.
Human head, on vases, 106, 131, 146, 148 (plastic), 170 (plastic), 177; on coins, 357, 358, 359, 360, 361, 362, 363; of porcelain, 372.
Hylleis (Ὑλλεῖς), in inscription on bronze, 333.

Ialysos, vases from, 82, 93.
"Ialysos" types (funnel-shaped vases), 88.
Ibex, on scarab, 371.
Idols, terra-cotta, 22; resemblance of bronze to, 272.
ἱερὸς γάμος, represented in terra-cotta groups (?), 22; relation of Heraea to, 22 *n.* 1.
Imhoof-Blumer and Keller, reference to, 78.
Implements, utensils, structural pieces and materials, in bronze, 298–331.
u for ι, in inscription on bronze, 333.
Iné, fibula from, 247 *n.* 1.
Inscribed bronzes, ring, 250, mirror-handle, 265, binding-strip, 270, inscribed plates, 273 f., vessels of bronze, 277, 278, 284, 297, antyx, 298, bar, 331.
Inscriptions, on vases, painted, 185, incised, 185–187; on bronze, 332–339; on silver ring from Heraeum, 338; on silver pin in British Museum said to be from near Heraeum, 339. *See also* Inscribed bronzes *and* Egyptian objects.
Intaglio, ornament on seals, bronze, 250 f.
Interaction of vase painting and coroplastic art, 6 and *n.* 9, 7.
Inverted design, 91, 151 ff.
Io, Hellenistic identification of Isis with, 197.
Iron, 203, 243, 270, 274, 296, 302, 324, 327, 329, 330. *See also* Pins.
Isis, 197; headdress of, compared with that of terra-cotta figurine, 13 *n.* 4.
"Island stone" from bee-hive tomb near Heraeum, 92.
ἴυθμιον, represented on terra-cotta figurines, 11.
Ivories, 351–353.
Ivory, pins from Mycenae, Tiryns, and Troy, 208 *n.* 2, from Mycenae, 217 *n.* 1; seal of, 251.
Ivy pattern, 145, 146, 161, 177, 178.

Jackal, on scarab, 371.
Jars, bronze, 286.
John Zimisces, coins of, 363.
Jones, H. Stuart, reference to, 48 *n.* 1.
Jugs (Kannen), 73, 84, 92, 93, 96, 99, 105, 107, 114, 118, 131, 132, 143, 145, 153, 154; tea-pot shaped, 94, 117, 143; with three handles, 71, 96, 100, 101.
Julia Domna, head and bust of, on coin, 359; coin of, 361.
Julian (called the Apostate), coin of, 362.
Jupiter, on coin, 362.

Kabbadias, P., references to, 36, 195 *n.* 4, 367.
Kabirion. *See* Cabirion.
Kalathoi, 124, 125, 144. *See* Calathos.
Kalkmann, A., his measurements, 195, 196.
Kameiros. *See* Camirus.
Karneia. *See* Carneia.
Kavousi, pin from, 241 *n.* 7.
Kekule von Stradonitz, R., references to, 35, 36, 37, 41, 52.
Keros, terra-cotta figurines from, 112.
Kertsch, terra-cotta figurine from, 35.
Key, bronze, 299.
Kithara, on vase, 112.
Knives, bronze, 299 f.
Knobs of covers, vases, 140 ff.
Koehler, U., references to, 112, 333.

Koppa, on inscribed vase, 186; on coins, 357 f.
Ϙόραγος, name inscribed on vase, 186.
Koré, represented in terra-cotta groups, 14, 22.
Körte, A., references to, 68, 70, 71, 97, 332.
Körte, G., references to, 196 *n.* 2, 197 *n.* 3.
Körte, G. and A., references to, 246 *notes* 2, 4.
Kothons, 143, 166.
κουροτρόφος figures, of terra-cotta, 12 *n.* 1, 13, 19, 21, 25.
Kylix. *See* Cylix.

Labeo, L. Furius, name on coin, 358.
Laconia, coins of, 358 f.
Ladle, bronze, 296 f.
Lamps, 180, 183 f.
Larisa, coin of, 357; head of, on coin, 357.
Laurent, M., fragment of vase from Heraeum published by, 113, 164 *n.* 2, 165 *n.* 1.
Leaf pattern, on vases, 80, 81, 93, 105, 131, 146, 183; on bronzes, 233, 266, 282, 283, 285, 287, 288, 296, 297, 299, 328.
Leather gear, imitated in bronze, 275.
Leaves, bronze, 274.
Lechat, H., references to, 14 *n.* 4, 34, 35.
Lekythoi, 119, 122, 123, 124, 126, 127, 131, 145, 146, 148, 151, 158, 176, 178, 197 *n.* 3.
Lenticular shape, engraved stones of, 346, 350.
Leto, in group with Chloris, on coin, 359.
Licinius, coin of, 362.
Linear development of Argive style, in vases, 62, 66, 88, 120, 121. *See* Argive-Linear.
Lion, terra-cotta, attacking bull, 15, 39 f., heraldic, on plaque, 7, 28, on plaques, 48, 54; on vases, 146, 151, 153, 159, 160, 161, 167, 169, 171, 177, 182; bronze, in relief, 198, 199, 293, in the round, 202, 203, 235 (head of), on bow of safety-pin, 249, intaglio on seal ring, 250, on gold breastplate from Cervetri, 251 *n.* 1, lion's feet tripod standards, 295 f., paw of, 331; on engraved stone, 350; on ivory, 351; skin of, on coin, 359; head of, on coin, 363.
Lion Gate at Mycenae, compared with terra-cotta plaque from Heraeum, 28.
Lizard, on vases, 115, 147; on bronze, 198.
Local varieties of vases at the Heraeum, 62, 176.
Loeschcke, G. *See* Furtwängler and Loeschcke.
Loop pattern, on vases, 86, 87, 88, 94.
Lorimer, H. L., reference to, 298.
Lotus, on vases, 137, 138, 145, 167, 178; on bronzes, 196 f., 285.
Louvre, relief vase in, 49 *n.* 1; other vases in, compared with Heraeum vases, 84, 100, 127, 131, 163, 180; torso from Actium in, 194; hydria of Timagoras in, 195 *n.* 3.
Lozenge, on vases, 70, 84, 86, 87, 88, 90, 105, 106, 107, 109, 110, 111, 114, 116, 117, 118, 121, 127, 128, 129, 130, 134, 135, 137, 143, 147, 148, 152, 157, 162; lozenge shape, engraved stones, 346, 348.
Lusi, pin-head from, 213 *n.* 1; pin from, 220 *n.* 1; fibula from, 240 *n.* 4, 241 *notes* 1 and 7.
Lythgoe, A. M., Egyptian or Graeco-Egyptian Objects from the Argive Heraeum, 367–374.

Maeander, on vases, 106, 109, 110, 111, 112, 114, 115, 116, 117, 118, 121, 129, 130, 133, 134, 135, 136, 137, 157, 158, 162; on bronze, 229.
Maenad, on vase, 179.
Marcus Aurelius, head of, on coins, 358, 359.
Martha, J., references to, 6 *n.* 8, 9 *n.* 6, 14 *n.* 5, 19, 21, 24, 28, 32 *n.* 1, 34, 36, 40, 41, 42, 298.
Maspero, G., references to, 369 *n.* 2, 371, 373, 374.
Masques of terra-cotta, 38.
Medical instruments, bronze, 303, 323.
Megara Hyblaea, terra-cottas from, 14 *n.* 6, 28, 34, 37, 42, 43; vases from, 99 *n.* 1, 100, 119, 131, 144, 154, 155; pin from, 218 *n.* 2, 223 *n.* 2; rings from, 251 *n.* 3, 264 *notes* 1 and 3, 327.
Megarean vases, 62, 180, 182 f.
Melian vases, 159, 163.
Melos, terra-cotta figurines from, 10 *n.* 1, pottery from, 66, 71, 154, 276 *n.* 1; engraved stone from, 349.
Menidhi, vase from, 161; bronze pin from, 213 *n.* 2.
Mikos, name on inscribed vase, 186.
Milchhöfer, A., theory as to bronze pins and spits, 235 *n.* 3; other references to, 50 *n.* 4, 52 *n.* 5, 181, 235 *notes* 3 and 5, 313 *n.* 1, 329.
Mirrors and mirror-handles, bronze, 264–266; mirror-handle, 196 *n.* 3.
Miscellaneous types of vases, 159–165.
Moncucco, pins of Italic type from, 207 *n.* 3.
Monkey, terra-cotta, 15, 42; on seal of silver ring from Heraeum (?), 338.
Montelius, O., references to, 10 *notes* 8 and 12, 11 and *n.* 2, 207 *n.* 3, 208 *n.* 3, 215 *n.* 2, 228 *n.* 1, 235 *n.* 2, 240 *notes* 1, 3, 6, 241 *notes* 3–6, 242 *notes* 1, 2, 244 *n.* 4, 298, 327.
Moulds, use of, for terra-cotta figurines, 7, 8; of terra-cotta, 43, 48; vases, 181.
Mouse, bronze, 203.
Murex, on terra-cotta mould, 48, 49; on vases, 81, 82, 85, 86, 157.
Murray, A. S., references to, 191 *n.* 1, 217 *n.* 2, 367 *n.* 6, 372.
Mycenae, terra-cotta figurines from, 10 *n.* 2, 22; whorls from, 44; bull's head from, 23; vases from, 71, 78, 97, 102, 108, 113 (silver), 161, 181; pins from, compared with bronze pins from Heraeum, 208 *n.* 2, 209 *n.* 1; bronze tacks from, 214 *n.* 1; pins from, 217 *n.* 1; fibulae from, 240 *n.* 2, 241 *n.* 7, 244 *n.* 4; gold ring from, 250 *n.* 3, 251 *n.* 3, gold disks from, 269 *n.* 2; bronze saucer from, 278; gold cup from, 283 *n.* 1; amphora from, 287 *n.* 1; knives from, 300; gold tacks and bronze nails from, 325.
Mycenaean style in vases, 60, 61, 62, 65, 66, 70, linear development of, 66, 88, origin of, 71, with "dull" decoration, 71–74, 156, with "lustrous" decoration, 74–91, 156, from bee-hive tombs, 91–95, classification of, 74–77, date of, 77, 78, survival of Mycenaean style, 105, 126; in bronzes, 193.
Mycenaean, terra-cotta figurines, 5, 9, 14, 22 f.; engraved stones, 346, 350.

Nails, bronze, 324–327.
Naples, vases in Museum at, compared with Heraeum specimens, 131, 135, 155, 166 *n.* 2.
Naturalism, in Mycenaean vases, 76, 81.
Naturalistic style, in bronzes, horses, 200, cattle, 201, lion, rodent, frog, 203, serpents, 204, birds, 206.
Naucratis, "cake-stamps" from, 48; pottery from, 135, 159, 178, 180; Egyptian objects from, 367, 368, 372.
Naukydes, group of Hera and Hebe by, 22.
Nauplia, vases found at, 78, 84.
Necklace, forms of, on terra-cotta figurines, 11; in zigzag pattern, bronze, 196; compared with terra-cottas from Heraeum, 196 *n.* 5; on terra-cotta figurines from Terravecchia, 267 *n.* 2.
Needle, bronze, 250; ivory, 92, 353.
Nemean lion, Herakles and, on vases, 177.
Nero, head of, on coin, 360.
Nessos, on vases, 163.
Net ornament, on vases, 82, 105, 107.
Neuchâtel and Brienne lakes, pins from, 217 *n.* 1.
Nicandra, statue, 8, 30.
Nikasias, name in inscription on bronze, 337.
Niké, on vase, 183; on coins, 358, 361.
Niké of Archermus. *See* Archermus.
Norton, R., Engraved Stones, Gems, and Ivories, 343–354; theory as to flower ornament on bronze pin-heads, 234 *n.* 2; suggestion as to cut figure of bronze, 274 *n.* 2.
Novilara, bronze ring from, compared with bronzes from Heraeum, 258 *n.* 1.
Nude female type, fragment of bronze statuette of, 196 and *n.* 2.
Nymphaea caerulea, 373.

Obsidian, fragments of, found at Heraeum, 353.
Oinochoai, 69, 70 (?), 71, 99, 100, 107, 126, 128–131, 144, 145, 148–151, 159, 160, 166, 168, 170.
Olive branch on coins, 361.
Olympia, figures of animals found at, 6; bronze reliefs from, compared with terra-cotta reliefs from Heraeum, 51, 52; tripods from, 164; bronzes from, compared with Heraeum bronzes, 193, 194 *n.* 2, 195, 198 *notes* 1, 2, 3, 199 *notes* 1, 2, 200 *notes* 1, 2, 201 *n.* 2, 202 *n.* 4, 204 *notes* 2, 3, 205 *notes* 1, 2, 215 *notes* 1, 2, 219 *n.* 1, 223 *n.* 1, 225 *n.* 1, 226 *n.* 1, 230, 232 *n.* 2, 235 *n.* 2, 240 *notes* 5, 6, 242 *notes* 1–4, 243 *notes* 1, 3, 244 *n.* 1, 246 *notes* 1, 3, 247 *notes* 1, 2, 249 *n.* 1, 250 *n.* 1, 259 *n.* 1, 261 *notes* 1, 4, 262 *notes* 1, 2, 264 *notes* 1–6, 265 *n.* 3, 267 *n.* 2, 269 *n.* 3, 270 *n.* 1, 275, 283, 287 *n.* 1, 288, 289, 291, 292, 293, 294, 295, 296, 297, 298, 299, 325, 326, 327, 329; ivory from, 351.
Open-work vases, 144.
Orchomenos, vases from, 119, 153, 155; "Apollo" statue from, 195 *n.* 4.
Oriental influence in terra-cotta figurines, 7, 8 *n.* 3, 9, 13 and *n.* 4, 28 f.; in terra-cotta plaques, 49, 52, 54; in vases, 66, 121, 122, 144, 145, 163, 182; in bronzes, 193; in lotus headdress of bronze statuette, 196 f., in cattle, 202, explanation of term Oriental as used in connection with the bronzes, 202, in lion, 203, in ivories, 251.
ὅρμος, represented on terra-cotta figurines, 11; gold *hormus* from Camirus, 51.
Ornament and toilet, bronze articles, 207–275; cut ornaments of bronze, 274; ornamented bronze bands, 270; ornaments of bronze vessels, 294.
Orsi, P., Sicilian terra-cottas published by, 3 *n.* 3, 10 *n.* 1, 14 *n.* 6; on "Bes" type, 28; on "Spes" type, 34; other references to, 35, 37, 43, 133, 218 *n.* 2, 223 *n.* 2, 232 *n.* 1, 251 *n.* 3, 254 *n.* 1, 264 *notes* 1, 3, 267 *n.* 2, 295, 327.
Osiris crown, translation of, into terms of lotus, 197 *n.* 4.
Oven, terra-cotta, 15.
Owl, on vases, 147, 148, 168, 172.
Ox. *See* Cattle.
Oxides, process of removing, 192 and *n.* 2; iron oxide, 330.

Pallat, L., references to, 133, 135, 138, 143, 152, 153, 158.
Palm-tree, on vases, 85, 87.
Palmette, on vases, 135, 136, 138, 145, 146, 147, 154, 157, 158, 159, 167, 168, 169, 171, 172, 173, 174, 177, 179, 182; on bronzes, 197, 265, 285, 287.
Pan, terra-cotta, 37.
Panther, on vases, 115, 147, 149, 150, 151, 152, 153, 154, 167, 168, 170, 171, 177, 182.
Patera, vase, 178; bronze, from Tiryns, 275.
Patrae, coin of, 358.
Pausanias, references to, 5 *n.* 2, 13, 22 *n.* 1, 174 *n.* 3, 234 *n.* 2, 333.
Peacock (?), of bronze, 205, 206 *n.* 1.
Pegasus, on coins, 357, 358.
"Pelasgian" origin of Mycenaean style, 71.
Pendants, earrings with, on terra-cotta figurines, 12; bronze, 264; in Museo Kircheriano, 264 *n.* 5; from Megara Hyblaea, 327.
Peregrinus, L. Aerius, name on coin, 358.
Pernice, E., references to, 113 *n.* 2, 154.

περόναι, represented on terra-cotta figurines, 11, 18, 19, 20. *See* Pins.
Perrot and Chipiez, references to, 11 and *n.* 9, 18, 23, 36, 40, 95 *n.* 1, 195 *n.* 2, 196 *n.* 5, 197 *n.* 1.
"Persian Artemis," analogy of figure on terra-cotta plaque to, 50, 52, 54.
Pestle, bronze, 324.
Petasus, on coin, 357.
Petersen, E., reference to, 197.
Petrie, W. M. Flinders, references to, 29, 66, 77, 85, 91, 156, 367 and *notes* 3, 7, 370, 371, 373.
Phaleron jugs, 122, 153, 160 and *n.* 1.
φάλματα, in inscription on bronze, 333.
Phiale, 178. *See* Saucers *and* Plates.
Phidon, of Argos, date of, 64 f.
Phillias (?), name in inscription on bronze, 332.
Philostratus quoted, 15 *n.* 4.
Phocis, coin of, 357.
Phoenician ware, in British Museum and Louvre, analogous to Heraeum vase fragments, 68; bottle, from Heraeum, 353.
Phylakopi, terra-cotta figurines from, 10 *n.* 1; decoration on fragment of pottery from, 276 *n.* 1; knives from, 300.
Pig, terra-cotta, 15, 41.
Pilos, on terra-cotta figurine, 16, 17.
Pinakes, terra-cotta, 47, 54; pottery, 117.
Pindar, quoted, 51 *n.* 4.
Pins, bronze, 203, straight, 191, 207–239, 309, 311, 321, safety-pins, 240–249, pseudo-safety-pins, 249 f.; pin of iron separable from bronze head, 209, 210, 213, 216, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232 (stem and corrugation of pin of iron), 246, 247, 248, pin of copper, separable from bronze head, 216, 225, 236, 237, 238, 239, 240; of ivory, 353.
Pipes, on lamp, youth playing, 184; porcelain figure of Apollo playing, 373.
Pirasos, seated figure of Hera by, 5, 13.
Pitcher, bronze, 286.
Pithoi, 68, 116, 181, 182.
Plaques, terra-cotta, 47–54. *See* Terra-cotta reliefs.
Plates, pottery, 80, 107, 115, 116, 126, 141, 142, 145, 154, 159, 166, 172, 176; from Aegina, 116, 120 *n.* 1; bronze, 272–274, 275–277.
Platters, bronze, 277 f.
Plektron, bronze, 324.
Polos, representation of, on terra-cotta figurines, 5, 12, 13 and *n.* 6.
Polychrome vases, 158, 178, 179 f.
Polycleitus, group of Hera and Hebe by, 22; Doryphoros of, 184. *See also* Hera.
Polymedes, statue at Delphi by, compared with bronze statuette, 195.
Pomegranate, terra-cotta figure holding (?), 15 *n.* 4; on vases, 148, 170, 173, 174; on bronzes, 234 *n.* 2.
Pot-hooks, on vases, 107, 126, 127, 130, 137, 145, 148, 154, 173.
Potter's wheel, use of, in terra-cotta figurines, 7.
Pottery. *See* Vases.
Pottier, E., reference to, 68 *n.* 1, 127, 135, 155, 181.
Pottier and Reinach, interpretation of terra-cotta cones, 15 *n.* 10, 42.
Praesos, gold rosette from, 232 *n.* 1.
Prehistoric style. *See* Primitive.
Primitive Argive, terra-cotta figurines, 4, 9, 16 f.
Primitive style in vases, 60, 62, 68 ff.; date of, 68, 69.
Primitive period in bronzes, 193.
Primitive style in engraved stones and gems, 345.
Probus, coins of, 361.
"Proto-Corinthian vases," 61, 62, 63, 64 and *n.* 9, 66, 67, 122. *See also* Argive.
Pseud-amphoras (Bügelkanne), 77, 85, 87, 88, 90, 92, 95.
Pseudo-safety-pins, bronze, 249 f.
Ptah, porcelain figure of, 372.
Ptoan Apollo. *See* Apollo.
Punctuation in inscriptions, 333.
Pupienus, coin of, 361.
Purple fish. *See* Murex.
Pyramid shape in engraved stones, 349.
Pyxides, 87, 123, 126, 133, 136–139, 145, 148, 153, 164, 166, 168, 169, 181.

Quadriga, on terra-cotta plaques, 48, 53; on vases, 113, 178.
Quiver, on coin, 359.

Rabbit, porcelain figure of, 368.
Radowitz, Herr von, lekythos in collection of, 146.
Ram, terra-cotta, 15; head of, 41; on vases, 168; of bronze, 201; ram's horn in Osiris crown, 197; on ivory, 353.
Rayet, O., and M. Collignon, references to, 6 *n.* 10, 23, 160 *n.* 1.
Rays, on vases, 70, 82, 91, 101, 106, 110, 111, 114, 127, 128, 129, 130, 133, 134, 135, 136, 137, 138, 140, 141, 142, 143, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 157, 158, 159, 162, 166, 167, 169, 170, 172, 173, 174, 178; on bronzes, 269, 280, 281, 282, 331.
Rectangular engraved stones, 346, 348.
Red-figured style, in vases, 60, 62, 65, 174, 178–180.
"Red" ware, vases, 180–182, and 180 *n.* 4.
Reichel, W., and A. Wilhelm. *See* Lusi.
Reinach, S., concerning female figures with horses, 40. *See also* Pottier.
Relief, vases in, 180.
Reliefs, terra-cotta. *See* Terra-cotta.
Remedello, silver pin from, 215 *n.* 2.
Retrograde inscriptions, on vase, 186; on bronze, 332 f.
Rhodes, influence of, in terra-cotta figurines, 15, 37, in vases, 151; connection with Argos, 51; vases from, compared with those from Heraeum, 71, 135, 154, 159, 163.
Rhyton, 179.
Richardson, R. B., reference to, 338 *n.* 1.
Ridgeway, W., references to, 9 *n.* 6, 250 *n.* 2.
Rims, bronze, 272.
Ring-form aryballos, 143, 148 *n.* 1.
Rings, of terra-cotta, 16, 44; of bronze, 92, 191, 250–264, finger-rings, 250 f., bracelets, 251, decorative, 251–263, structural, 263 f., wire twisted into form of, 264 *n.* 1; silver ring from Heraeum, 338.
Robinson, E., interpretation of vase, 162 and *n.* 1.
Rodent, bronze, 203.
Rods, bronze, 294.
Rogers, J. D., references to inscription from Heraeum published by, 273 *n.* 2, 333 and *notes* 1, 3, 5, 334, 335, 336.
Rolfe, J. C., references to, 299, 339.
Roma, on coin, 362.
Roman ware, 62, 180, 183 f.
Rome, coins of, 361 ff.
Rooster, on vase, 168.
Rosettes, on earrings of terra-cotta figurines, 12, 21, 27, on brooch of same, 21, 25, on dress of, 26, on headdress of, 13, 27; on terra-cotta spools, 44; on terra-cotta plaques, 48, 54; on vases, 70, 80, 84, 86, 87, 94, 100, 101, 105, 106, 107, 108, 110, 111, 127, 130, 131, 139, 141, 142, 145, 146, 147, 149, 150, 151, 152, 153, 154, 155, 157, 158, 159, 160, 161, 162, 164, 168, 169, 171, 183, 184; on bronzes, 196, 197, 201 *n.* 3, 202, 203, 217 *n.* 2, 218, 219, 232 and *n.* 1, 251, 265, 268, 269, 270, 276 *n.* 1, 277, 281, 283, 325, 330; on engraved stone, 350; on ivory, 352; on coin, 363; on porcelain whorl, 373.
Running-dog pattern, on terra-cotta figurine, 31; on vases, 85, 87, 88, 105, 107, 111, 116, 128, 131, 137, 142, 157, 159.
Ruvo, cylix from, compared with one from Heraeum, 180.

Safety-pins. *See* Pins.
Sail or saucer pattern safety-pins, bronze, 242.
Salamis, bronze rings from, 250 *n.* 3.
Sambuka, Koehler's theory as to, 112.
Sandal, terra-cotta foot with, 16, 43.
Sanguisuga type of fibulae, 244 *n.* 4.
σανίς type, of terra-cotta figurines, 30.
Sanitary vases, 93.
Satyr, terra-cotta figurine representing (?), 37; on vases, 177, 178, 179, 180; on bronze mirror-handle, ithyphallic satyr, 265.
Saucer pattern. *See* Sail or saucer pattern.
Saucers, vases, 96 ff., 125 ff., 158, 159; bronze, 278–284.
Scale pattern, on vases, 88, 155, 162; on bronzes, 265, 274, 285.
Scarabaeus, on scarabeoids, 371, 372.
Scarabeoids, from Heraeum, 369, 371, 372.
Scarabs, 352, 368, 370 f.
Schliemann, H., concerning "unpainted" terra-cottas from Tiryns, 6 *n.* 4; concerning "bands" on terra-cotta figurines, 11; other references to, 9 *n.* 5, 16, 17, 18, 19, 20, 22, 24, 26, 30, 41, 42, 44, 78, 85, 86, 88, 89, 90, 91, 143 *n.* 5, 160 *n.* 1, 283 *n.* 1, 345.
Schreiber, Th., reference to, 195 *n.* 4.
Scorpion, on vases, 115, 147; on engraved stone, 349.
Scraper, bronze, 300.
Seals, bronze, 250 f., 264; use of engraved stones as, 344.
Searles, Helen M., reference to, 333.
Serpent, terra-cotta, 15, head of, 41; bronze, 198, 204, 242, 251, 286, 289, 293. *See also* Snake.
Sheep, on vase, 170 (plastic); bronze, 201.
Sheet bronze, objects in, 266–274.
Sheet gold, fragments of, 329.
Shield, on terra-cotta figurines, 40; on vases, 112 and *n.* 2, 148, 161, 162, 163, 164, 169, 170, 172, 177, 179, 183; shields from Dictaean Cave, 299 *n.* 1; shield rim, binding of, 328; shield shape, engraved stones, 346, 348; on coins, 358, 361, 362.
Ship, on vase fragment, 113 and *n.* 2.
Sickle, bronze, 299.
Sicily, terra-cottas from, compared with those from Heraeum, 3 *n.* 3, 10 *n.* 1, 14 *notes* 4 and 6, 52; vases from, 64; name in inscription on bronze, 338. *See also* Orsi.
Sicyon, coin of, 358.
Sicyonia. *See* Sicyon.
Sicyonian inscription, 117 *n.* 1, 185.
Silenus, head of, in relief on vase, 187.
Silver, pin from Heraeum in British Museum, 191 *n.* 1, 217 *n.* 2, 339; pin from Remedello, 215 *n.* 2; ring from Heraeum, 338; coins of, 357, 358.
Siren, terra-cotta, 41; on vases, 150, 151, 152, 153, 167, 172.
Sistrum, on coin, 359.
Situla, silver, in Florence, compared with vase from Heraeum, 148; on coin, 359.
Skyphoi, 74, 91, 107, 108 *n.* 1, 112 *n.* 2 and 113 *n.* 1, 2 (from Eleusis), 117, 118, 123, 126, 132–136, 138, 144, 145, 148, 151–153, 158, 166, 167, 168, 173, 176, 177, 179.
Slip, use of, on terra-cotta figurines, 6, 7, 9.
Smith, Cecil, concerning stamps in British Museum similar to terra-cotta mould from Heraeum, 48 f.; excavations in Melos, 66; other references to, 64 *n.* 2, 122, 156.
Snake, on vases, 69 *n.* 1, 80, 98, 105, 106, 126, 128, 130, 134, 135, 137, 142, 159, 160, 174; bronze, head of, 249, 274; on engraved stones, 343, 347, 348, 350, 352. *See also* Serpent.
Sodamos (?), name in inscription on bronze, 333.

Sparta, pins in Museum at, 235 *n.* 3.
Spatula, bronze, 299.
Spear, on vases, 112, 150, 161, 162, 164, 169, 170, 172, 174, 177, 178, 182, 184; on coin, 357, 361.
Spear-butt, bronze, 323 f.
"Spes" type, terra-cotta figurines, 34.
Sphinx, terra-cotta, 8, 29; on vases, 148, 149, 150, 154, 165, 167, 168, 169, 170, 171, 172, 177, 182; bronze, 197 *n.* 2, 287; blue-glazed frit figure of, 371.
Spider, on engraved stone, 348.
Spirals, on vases, 73, 74, 79, 80, 81, 82, 84, 85, 88, 93, 94, 105, 130, 154, 156; on coin, 360.
Spits, bronze, 239, 300–323, 326.
Spool-feet. *See* Tripods.
Spool shape, engraved stones, 345, 348.
Spools, terra-cotta, 15, 44.
Spoon, of ivory, 353.
Stag, terra-cotta figurine holding (?), 35; on vases, 150, 164, 169; on scarabs, 368.
Stamnos, 172.
Standards, bronze, 331. *See also* Tripods.
Star pattern, on vases, 105, 107, 109, 110, 112, 137, 142, 154, 168; on bronze, 275, 281; on engraved stone, 345; on ivory, 351, 352; on coin, 361.
Star-fish pattern, on engraved stones, 349.
Statues, fragments of, in bronze, 194.
Statuettes, in bronze, 194–196, fragments of, 196 f. *See also* Terra-cotta figurines.
Steatite, as material for engraved stones, 343, 344.
Stephané, representation of, on terra-cotta figurines, 12, 13 and *n.* 6, 16, 17, 18, 19, 20, 22, 24, 26, 27, 28, 31, 33, 35, 36, 37, 38.
Stephanos, representation of, on terra-cotta figurines, 12, 13 and *n.* 6; worn by Hera, on coin, 359.
Stove, on vase, 174.
Straight pins. *See* Pins.
Strigil, bronze, 299.
Strips, binding, bronze, 269, decorative braces and strips, bronze, 328–330.
Studniczka, F., references to, 10 *n.* 10, 11 *n.* 11, 50 *n.* 3, 175, 195 *n.* 4, 247 *n.* 1.
Stylus (?), of ivory, 353.
Suessula, fibula from, 240 *n.* 4.
Sugar-bowl vases, 136, 166, 170.
Suidas quoted, 13 *n.* 12.
Sun's disk, on scarabs, 370, 371.
Supports, bronze, 330.
Suspension vase, bronze, 193, 286; one from Aegina, similar to specimen from Heraeum, 286.
Swan, bronze, 206; on ivory, 352.
Swastika, on vases, 70, 84, 107, 110, 114, 128, 129, 162, 163; on coin, 358.
Sword, on vases, 113 *n.* 1, 148, 150, 161, 162, 163.
Syra, vases from, 73, 97; knife from, 299.
Syracuse, terra-cotta figurines in Museum at, similar to Heraeum specimens, 10 *n.* 1, 35, 36, 41, 42; vases from, 99 and *n.* 1, 100, 106, 119; vases at, 126, 127, 128, 133, 134, 135, 144, 152, 178.
Syrinx, terra-cotta figure playing, 18.

Tables, terra-cotta, 15, 42.
Tanagra, tripod vase from, in Berlin, 52.
Tear jugs, 183.
Technique, of the bronzes, 193. *See also* "Dorian" technique.
Tegea, terra-cotta figurines from, 5, 9 and *n.* 6, 14 *n.* 4, 19, 21; type of bronze pins at, 235 *notes* 3 and 5; pendant from, 264 *n.* 6; spit from, 313 *n.* 1; bed in archaic relief from, 329.
Temple, on coins, 358.
Terra-cotta figurines, 3–44; number of, 3, 9; finding places of, 3; classification of, 4 ff.; interpretation of, 13 ff.; catalogue of, 16 ff.; Primitive, 4, 9, 16 f.; Tirynthian Argive, 5, 7, 9, 17 ff.; Mycenaean, 5, 9, 14, 22 f.; geometric, 5, 6, 9, 14, 23; Advanced Argive, 5, 7, 8, 9, 24 ff.; under Oriental influence, 7, 9, 28 f.; Early Archaic, 8, 9, 29 ff.; Advanced Archaic, 9, 38 f.; Free style, 9, 39; animals, 9, 15, 39 ff.; various objects, 9, 42 ff.; from bee-hive tomb near Heraeum, 92.
Terra-cotta reliefs, 47–54; finding places of, 47; classification of, 47; purpose of, 48; detailed description of, 49–54; reference to, 169.
Terramare, pins from, 235 *n.* 2.
Terravecchia, terra-cotta figurines from, 3 *n.* 3, 10 *n.* 1, 14 *n.* 6, 267 *n.* 2.
Textile patterns in vases of Mycenaean style, 86 ff.
Thamophilos, name in inscription on bronze, 336.
Thera, fibulae from, vases from, 66, 68, 135; "Apollo" statue from, 195 *n.* 4, 243 *n.* 2.
Therasia, vases from, 80; wall painting from, 85.
Thessaly, coin of, 357.
Thisbé, terra-cotta figurines from, 10 *n.* 1, 24.
Thoricus, vases from, 74, 75, 76, 78.
Thunderbolt, on coins, 358.
Thyrsos, on vases, 179.
Thystia, name in inscription on bronze, 332.
Tiberius, head of, on coin, 358.
Tiles, terra-cotta, 47.
Timonidas jug, 172 *n.* 1.
Tiryns, terra-cotta figurines from, 5, 6 *n.* 4, 9, 16, 17, 18, 19, 20, 22, 24, 41, 42, 44; vases from, 68, 71, 78, 90, 97, 102, 119, 143, 181; pins from, 208 *n.* 2, 215 *n.* 2, 217 *n.* 1; bronze patera from, 275; knife from, 300; 328.
Tirynthian Argive terra-cotta figurines, 5, 7, 9, 17 ff.
Titus, head of, on coin, 360.
Toilet. *See* Ornament.
Tongue pattern, on vases, 70, 80, 131, 137, 139, 140, 141, 159, 168, 169, 171, 172, 173, 174, 178, 179, 182.
Tooth ornament, on bronze, 198, 200.
Torch, on vase, 179; on coins, 358, 359.

Tortoise, terra-cotta, 15, 42.
Trau Collection, bronze statuette in, 196 *n.* 1.
Tree, terra-cotta, 16, 43; on vase, branch of, 181; on engraved stone, 347; on coins, 359, 360.
Trefoil, on vase, 161.
Triangles, on vases, 87, 116, 133; on bronze, 275, 276, 277.
Tripod, on vases, 113, 164, 183; tripod bowl, 166, 170, 177.
Tripod-standards, bronze, 292; tripods and tripod-standards, bronze, 294–296; fragment of large, 294, low standards, 295, feet, block, spool, lion's, 295 f.
Troy, ivory objects from, 69; vases from, 70, 93; pins from, 207 *n.* 1, 208 *n.* 2. *See also* Hissarlik.
Truth, goddess of, on scarab, 370.
Tsountas, Ch., concerning terra-cotta figures from bee-hive tomb near Mycenae, 10 *n.* 2, references to, 13 *n.* 11, 28, 29, 40, 50 *n.* 4, 54 *n.* 2, 240 *n.* 2, 241 *n.* 7, 251 *n.* 2, 299.
Turtle, on terra-cotta disk, 354.

Uraeus, on scarabs, 370, 371.
Utensils. *See* Implements.

Vases and vase fragments from the Heraeum, 57–184; introduction, 60 ff.; method of sorting and cleaning, 60, estimated number of fragments, 60, finding places of, 61, indigenous and foreign types, 62, classification of, 63 ff.; primitive, 68 ff.; Mycenaean style, 71 ff.; geometric style, 101 ff.; Argive style, 119 ff.; miscellaneous types, 159 ff.; Corinthian style, 165 ff.; black- and red-figured styles, 174 ff.; vases in relief and later vases, 180 ff.; of bronze, 275–294.
Vases with three handles, Mycenaean, 78, 79, 80, 84, 87, 92, 94.
Vehicles, parts of, bronze, 298.
Venice, coins of, 363.
Verus, L., head of, on coin, 358.
Vessels, of terra-cotta, 47; of bronze, 275–298.
Villanova, objects from, 228 *n.* 1, 241 *notes* 4, 5.
Volutes, on vase, 85; on headdress of bronze statuette, 196, 197 and *n.* 2, 296.
Vulci, Polledrara tomb, vase from, 294, 297, wheel on sarcophagus from, 298.

Wagon, on geometric vases, 109. *See* Chariot.
Waldstein, C., and G. H. Chase, The Terra-Cotta Figurines from the Argive Heraeum, 3–44.
Waldstein, C., and J. C. Hoppin, Terra-Cotta Reliefs from the Heraeum, 47–54.
Waldstein, C., references to, 39, 64 *n.* 1, 120, 195.
Warrior, terra-cotta, mounted, type of, 13, 40; on vases, 112, 113 and *n.* 1, 148, 150, 161–164, 169, 170, 172, 173, 174, 177, 179, 183; on coins, 362.
"Warrior vase" from Mycenae, compared with Heraeum vase, 148, 160 *n.* 1, 163.
Washington, H. S., results of analysis of clay of various vase fragments, 64 *n.* 9, 102 *n.* 2, 116.
Wave pattern, on vases, 69, 94, 105, 106, 107, 112, 126, 148, 183, 184.
Weights, terra-cotta, 15 and *n.* 10, 44.
Wheels, on vases, 85, 105, 116, 118, 132, 146, 164, 171, 179; bronze, 298 f.
Whip, on vase, 112 (?), 162, 182.
Whorls, terra-cotta, 16, 44; of steatite, 92, 353; of porcelain, 368, 373.
Wide, S., on origin of geometric style, 102; classification of geometric types of vases, 102 *n.* 1, 103 ff., 118 ff.; other references to, 66, 69 *n.* 2, 135.
Wilhelm, A. *See* Reichel.
Wilisch, E., references to, 135, 136, 149, 165 *n.* 2, 166, 167, 168, 169 *n.* 1, 170, 171, 172.
Winged figures, on terra-cotta plaques, 47, 49 ff.
Winged thunderbolt, on coin, 358.
Winter, F., references to, 14 *n.* 4, 34, 37, 194 *n.* 5, 197.
Wire, bronze, 264, 327.
Wolters, P., classification of Mycenaean vases, 74–76; theory as to origin of geometric style in vases, 102; other references to, 41, 51 *n.* 8, 243 *n.* 1.
Wreath, terra-cotta figurine holding, 15 *n.* 4, 35; on vases, 79, 145; on coins, 357, 358, 359, 362.

Xoana, 8, 353.

Zante. *See* Corfu.
Zeus, on coins, 358.
Zigzag pattern, on terra-cotta figurines, 23, 42; on vases, 73, 82, 85, 86, 87, 90, 91, 100, 101, 105, 106, 108, 109, 110, 111, 115, 116, 117, 118, 121, 127, 128, 129, 130, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146, 147, 149, 152, 157, 158, 159, 162, 164, 167, 168, 174; on bronzes, 196, 197 and *n.* 3, 198, 199, 200, 201, 207, 232, 235, 236, 237, 238, 239, 243, 250, 260, 261, 262, 263, 265, 266, 267, 269, 270, 271, 273, 274, 276, 281, 282, 283, 285, 293, 294, 295, 297, 299, 300, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 324, 329; on engraved stones, 346, 347; on other objects, 354.

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